Gleanings in Bee Culture

May, 1946 Vol. 74, No. 5

Spring Management

By Grant D. Morse

The Early Spring Examination Is a Time for Performing Several Manipulations, But Is a Still Better Time for Making Vaulable Observations

The typical beekeeper probably approaches his colonies more enthusiastically in the early springtime than at any other. At first he may feel a bit "rusty" about how to proceed—like a baseball player putting on his glove again for the first throw of the season, or like a skater trying the first freeze of the ice.

Whether the beekeeper has one hive, or a thousand, his problems are substantially the same. Of course, the latter has about one thousand times as much work to do. The chances are it won't take him a thousand times as long to do it—nor will he get a thousand times as much fun out of it. First of all, the initial spring examination should not take place until a day arrives warm enough to permit opening the hive without likely damage to the brood. But the earlier in the spring such a day comes, the better, for an early examination has certain values. For example, here are some of the conditions which the operator wants to know as soon as possible: (1) is there an adequate supply of honey and pollen present; (2) is the queen alive and laying, and what is her age; (3) are there sufficient number of worker bees in the colony to permit prompt expansion; (4) are the combs in good condition or have they been damaged by excessive moisture—or perhaps by a rascally mouse; (5) is the entrance large enough to permit travel room for the gatherers of spring pollen, nectar, and water; (6) is the hive equipment in reasonably good working condition for the coming season, or does all, or part, need repair, repainting, or replacement; (7)is there foulbrood present?

Early Correction of Faulty Conditions May Mean the Difference Between a Yield and a Total Loss

An early examination of a colony sometimes reveals a shortage of honey stores which can be corrected in time to save a force of bees that might otherwise perish. To be sure, it is better to be liberal enough in the fall to avoid such a shortage in the spring, but, it doesn't always work out so ideally. If the operator has extra combs of honey saved for just such a purpose, it is easy to place a sufficient number in the hive to take care of its needs. At such a time it is well to remember that the colony will require honey stores for its brood as well as for the consumption of the adult bees. Most colonies probably do not have ability to limit brood production to a

Entered as second class mail matter at the Postoffice at Medina, Ohio. Published monthly. Subscription Price—1 year, $1.50; 2 years, $2.25; 3 years, $3.00. Foreign, 25c additional.

B & Z Library

small supply of stores. They are more likely to begin curtailing brood production after the honey supply is practically exhausted. My experience has been that the average yard of bees almost always has some colonies that can spare a few combs for transfer to the ones needing help. This is chiefly because most of my bees are wintered in two standard hive bodies. In such cases I remove the two outside combs from the upper hive body. If combs of honey are not available, sugar syrup can be fed, employing the inverted feeder pail method, or some other. Of course a beekeeper who owns diseased colonies should not take risks by exchanging combs of honey.

"The Queen Is the Life of the Hive"

One of the most important reasons for an early spring examination is to discover whether the queen is present, and if so what her qualities apparently are. If the colony has lost its queen its forces will soon dwindle irreparably unless a new one can be introduced. Most queenless colonies accept a new queen rather readily at such a season—one of the chief reasons being, doubtless, that they have no basis for assuming that they can produce one themselves. Many beekeepers plan on having a few queens, or else queenright nuclei, ready to serve colonies found queenless in the early spring. Many, too, order a few queens for weekly arrival to replace losses up to swarming time. Where neither queens nor queenright nuclei are available within a reasonable time, it is probably a good plan to unite colonies, using the newspaper method, and placing the hive body containing the queen above, rather than below, the other. I customarily favor using the hive stand that supports the greater force of bees, regardless of which is queenright. If it is the operator's practice to clip the queens, the early spring examination (if time permits) is probably the best time to do it, as the relatively small number of worker bees present makes her discovery easier. Now is a good time to label the hive (in a place of the operator's preference) with the condition and age of the queen. This will help save time in future visits to the yard.

A Good Force of Workers in the Hive is Desirable

During this spring examination the operator naturally notes the approximate number of worker bees present. If this number is small it is natural for the operator to look to the reason. Now is a good time to study how to winter bees. Note which colonies have come through the winter best, then try to determine what factors helped, and which ones hurt, colony conditions. I recall one spring I was amazed to find as many of my well packed colonies dead as was the case with the unpacked ones. (That does not mean, of course, that packing is undesirable.)

I remember finding one recent spring during the initial examination, a colony with a queen and only five worker bees alive. Every other worker in this colony that had been populous in the fall was dead or gone. To me this was testimony of the care the working force normally give their queen. If the working force is found to be small upon this early examination the operator has the problem of deciding whether this condition may be the fault of the queen, and whether she is worth retaining. If the decision is in her favor, he then must determine whether to let the tiny force decide their own fate, to reinforce them with other bees, or to unite them with another colony. One good principle for the novice to keep in mind is that in beekeeping, results are measured not by the total of hive stands in the apiary but by the number of strong queenright clusters that populate the interiors of the hives.

The Condition of the Combs at the Spring Examination is Important

It doesn't take long to inventory the condition of the combs when the spring examination is made, and to remedy bad conditions on the spot or leave a marker on the hive to indicate the need of early treatment. If moldy or wet combs are found, I suggest looking to discover what caused this condition. Right then is the time to learn how to avoid making a similar mistake in winter preparation next fall. Personally I have never found wet or moldy combs in a hive that had been provided an upper, or top, vent or exit.

This winter I tried both methods rather extensively side by side in different yards in the hope of finding out which will work better for me. Occasionally, among a large number of colonies, the operator may find a mouse in the hive. This too is an expensive lesson, but it helps to teach how to avoid leaving conditions that will permit the entrance of rodents. Different localities vary in the degree to which mice are a nuisance, as is the case of skunks, bears, thieves, etc. I recall turning down a chance to purchase several seemingly attractive stands of bees in March a few years ago because no entrance cleats had been placed in the entrances the previous fall. Later when I talked with the man who did buy them I asked if he had found any mice in the hives. He said that he had not found a single mouse. But in my yards mice have always been a threat. Three years ago I discovered the presence of a mouse in a good colony by the bits of comb and wood the creature had left by the entrance. It was early winter and I didn't want to open the hive so I pushed a few kernels of poisoned wheat into the hive through the entrance. In the spring I found the rodent dead. I assumed the poison did the job.

The Beekeeper Should Watch Out for Disease

Every owner of bees hopes that he will never find disease present in his colonies, but it is a constant threat of which he should be aware and against which he should guard. American foulbrood, particularly, is not difficult to identify and state inspectors are glad to cooperate if notified by the beekeeper that it may be present in his colonies. It is one of the items each operator should add to the list he must look for when inspecting combs, not only at the first spring inspection, but during all subsequent inspections when brood is present in the hive.

Saugerties, New York.

Some Canadian Beekeepers

A small portion of the group which attended the Annual Beekeepers Field Day held at the Dominion Experimental Station, Swift Current, Saskatchewan, Canada, on June 8, 1945. The southwest portion of the province of Saskatchewan may not be climatically suited to extensive beekeeping operations until irrigation is further developed, but this study indicates the intense interest our beekeepers take in the subject. Reading from left to right in the group are Miss Anne Wilhelm, Swift Current, Saskatchewan; Mr. Thom Bowditch, Success, Saskatchewan; and Mr. R. M. Blakely of the Station staff who is discussing the laying habits of the queen bee.—R. M. Blakely, Assistant, Poultry and Horticulture, Dept. of Agriculture, Swift Current, Sask., Can.

Without Examining Frames

BY W. J. H. DICKS B. S. A.
University of British Columbia

The experienced beekeeper can enter a yard, stand in front of a hive, and, from the appearance of the alighting board and the behavior of the bees, deduce the conditions inside. This is not always possible for the average beeman; he may have to remove the top as well. The beginner will have to examine frames one by one before he can tell what is going on. However, there are plenty of signs around the apiary to give information as to inside conditions without having to go to the trouble of taking a hive apart. In this article, therefore, I propose to point out signs that lead to fairly accurate diagnoses, without having to do more than removing hive tops and tilting supers.

On entering the yard, the appearance of it in general will indicate the bees' activities: the noise of humming, and the speed with which the bees leave the hive, will indicate whether a honey flow is, or is not, in progress; the color of the pollen tells which plant is being worked; drones flying round the beekeeper's head indicate queen mating conditions; field bees flying round the head indicate a dearth of nectar. Examining the different hives, play spells of young bees in front indicate good brood rearing conditions within; too much activity at weak hives point to robbing. Hives showing less activity outside than others, even with the same number of supers on, are definitely behind the others and so need special attention. Bee hives increase in population very rapidly; the converse is also true, that is if anything goes wrong, the population decreases just as fast. Thus a hive which is left with three stories one week, may need only two the next week, instead of four.

Queenlessness. On looking down onto the frames, it is noticed at once that the bees are not tightly clustered between the frames. There is also a very distinctive buzz which, once heard, is not forgotten. Bees on the alighting board are not working as hard as bees on other alighting boards, and many mature bees are obviously idle. Bees are also running aimlessly about; but this must not be confused with the behavior of some colonies which "boil over" whenever they are disturbed.

There are various kinds: when a virgin queen does not return; when superseding bees have killed the old queen; when a queen starts to lay drone eggs; when there are laying workers.

To tell how long a hive has been queenless is not easy. If on tilting up the brood chamber, the drone brood along the bottom bars has all emerged, the hive may have been queenless a month. If there are eggs in the drone cells, it may be only a day or two. But such signs are not dependable without some other sign to back them up, because the queen may not have laid drone eggs for over a week or more. It would be necessary to examine the worker brood too, and note the condition of the youngest worker larvae.

If queenlessness is suspected, and no sign of a cluster is seen (as in the case of laying workers and drone layers in hot weather), it is safe to predict there is no worker brood at all. Laying workers occasionally drop eggs on the top bars and also on the bottom boards.

Drone Laying Queens. At first sight, the colony lacks numbers; it is a weak colony. An overabundance of drones will be noticed, which are noticeably smaller than the regular drones. If it is a warm day, the cluster will not be tight, so that the drone cells in the center of the frames can easily be seen down through the top bars.

Spring Dwindling. In spite of the hive being well packed and heavy with honey (poor honey), there will be drops of feces round the entrance and on the front of the hive which smell nasty. There is more on the top bars. This denotes dysentery. Dead bees lie on the alighting board, on the bottom board, and in heaps in the grass below the edge. The bees have not the energy to remove the dead. The colony becomes weaker every day, even a honey flow from early plants, such as willow, or even dandelion, fails to bring it up to normal. A colony which doesn't seem to get ahead, when all the others are doing well, is suffering from this malady.

Robbing. The alighting board, and

the ground in front of the hive are covered by dead bees, both field and nurse bees, some locked together as in battle. The bottom board is covered with cappings, roughly torn off. The hive feels light, relieved as it is of honey. There is little activity at the entrance.

Starvation. The hive feels light. There are few bees. Looking up through the bottom bars by tilting the super, the abdomens of dead bees can be seen poking out of the cells. The occasional hive starves in the midst of plenty, so hefting the hive is not a sure sign. If the bees are observed throwing out drones in cold wet spells in June, this is a sign of shortage of stores, so feeding must start at once.

Swarming. Examining the bottom bars of the top brood chamber will indicate queen cells. But it is well not to rely on this too much, because supersedure cells occur in the center of frames, and many swarm cells occur in pop holes.

Disease. On taking off the hive top, a bad odor is at once noticed.

Drawing out Foundation. Bees start with the center frame. Progress can easily be seen by peering down between the top bars. If there is brood, a cluster of bees can be seen by carefully tilting the super and looking up through the bottom bars.

Honey Storage. A honey flow is always indicated by a little white wax on the edges of the frames, the darker and older the frames, the more conspicuous are the white flakes. The converse is equally true, that if conditions in the field point to the progress of a heavy flow, then, if there are no white flakes of wax, there is positively no honey coming in. If perhaps the queen excluder is faulty, the presence of brood in the honey will be indicated by the comparative lightness of the super.

One last hint is well worth while. Observing the state of the weather between visits to the apiary will help in making diagnoses, too. Weak colonies and nukes are often robbed out on the first fine day after a cold wet spell. Swarms leave on such days as this also. Simple calculations, taking into consideration fine days and wet days, the stages of queen drone and worker larvae, will often point to the day on which a certain event occurred.

Armstrong, B. C.

[Beekeepers could save themselves considerable work by using their eyes more, and their hands less, especially during the height of the season when every move should count for the most.—Ed.]

The following article was given to me by the superintendent of one of the hospitals in Madison. It was clipped from a trade journal.—Harriett M. Grace.

USE OF HONEY IN TREATMENT OF CHILBLAINS, NONSPECIFIC ULCERS, AND SMALL WOUNDS

Preliminary Report

Although we have been able to supply Gadoment with its 70% cod liver oil content, without interruption, the following experience reported by K. L. Yang in Chinese Medical Journal, Jan.-Mar., 1944, is interesting. It was abstracted in J.A.M.A., March 17, 1945, as follows:

"Yang says that in the dermatologic clinic of the National Medical College at Shanghai cod liver oil treatment has been used in the treatment of chronic leg ulcers and small wounds and has been found to be very effective. This success is attributed to its rich vitamin A content, which has the property of stimulating epithelization and granulation tissue formation. After the medical college was moved to Kunming in 1939 the difficulty in obtaining cod liver oil prohibited its further use. It occurred to the author that honey might be employed as a substitute, the rationale of such treatment being that owing to its high sugar content, it is bacteriostatic; while owing to its yellow pigment, it might be rich in vitamin A. A honey ointment was made by the addition of 20% of petrolatum. The ointment was first used with encouraging results in leg ulcer. Later when the medical college was moved from Kunming to Chunking it was decided to resume the honey treatment, but since petrolatum was not obtainable, lard was used instead. The ointment, composed of 80% honey and 20% lard, was used in 50 cases of chilblains, chilblain ulcers, ordinary ulsers, and small wounds. Its success in hastening the subsidence of passive hyperemia and edematous swelling, and in stimulating epthelization and granulation tissue formation, was great. Its application is simple and convenient, and its sources of supply are plentiful, thus being especially useful under present wartime conditions."

WANTED

Good articles on anything dealing with bees. Write about your experiences. Send pictures if possible.

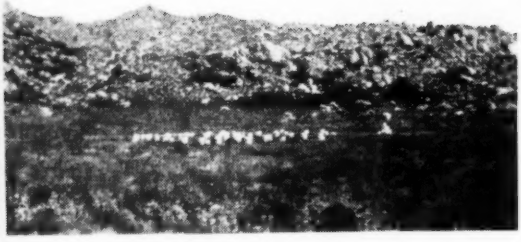
Will pay at our regular rate for contributions.

GLEANINGS IN BEE CULTURE

Medina, Ohio

Chasing Down the Honey Crop

By Clarence Tontz



Bees on sage location which is also used for a wintering yard. Many acres of good sage territory are being plowed and planted to grain in Southern California.

The way bees are being constantly moved out here causes one to wonder if they aren't on wheels as much as they are on the ground. As the old saying goes, "There's no rest for the weary". And out here there's no rest for the bees—or the beekeeper. When set down in a new location the bees hardly get their bearings when they are picked up and moved to another territory.

Recently I talked with Max Mayer, commercial beekeeper of Pomona in Los Angeles county, who has been in the game over a quarter of a century.

Some of Max Mayer's bees in his orange grove at Pomona, California. Mayer's bees averaged 75 pound surplus from orange in 1945.

He said he seriously doubts that the West is as good as the mid-west or East for beekeeping. The chief draw back here, he says, is the hard labor and expense of moving bees from one location to another. Here, to secure a crop anywhere near the equal of a good clover location in the mid-west, the beekeeper may have to move his bees as many as five times in one season. Unable to get competent help, Mayer and his wife are carrying on the big job of running their 2,000 colonies of bees and a couple of orange groves. Mrs. Mayer said their

A desert location. Many migratory beekeepers nail cleats on the front and back of each super near the top edge as shown. This makes them much easier to load and unload as well as reinforcing the top ends of each super. Objection to these cleats is that the supers cannot be packed close together when they are to be hauled to the extracting house. Advocates counter that they can put enough on a truck to make a load, and that's all that is necessary.

Irrigated alfalfa in full bloom in the Antelope Valley of Southern California. Although alfalfa is generally credited with being one of the most dependable sources of honey in the West, it, like most other honey plants of California, failed to come through to any extent during the season of '45. Some beekeepers who moved to the alfalfa took off 30 to 35 pounds surplus. Others let the bees keep what little surplus they made.

bees secured a 75 pound average from the orange this past season. The orange blossoms yield nectar freely only when the temperature is at least 80 degrees F., Mayer stated.

Some of the colonies were moved to sage locations after the orange, but according to Mayer, the bees might just as well have stayed home. Mayer usually moves part of his bees to the lima bean area each summer. The honey from this source, he says, is not of the best quality, but is a good wintering honey. To make increase, Mayer divides his colonies and locates them in the desert in the fall. However, this doesn't always work out so well, he added. Sometimes the divided colonies fail to build up and have to be united again the following spring to make them strong enough for the orange flow.

Another beekeeper that I also talked with lately stated that many locations in this state at times have four times too many bees. This, he says, is one of the reasons that orchardists are indifferent to the poisoning of bees. The orchardists realize that there are more colonies of bees than are really needed so it is no loss to them (at least not now) if a certain percent of the bee population is wiped out and another percentage is moved out of the area as is happening. This beekeeper claims that he has suffered losses from the effects of DDT poisoning.

Some orange growers appear to have the attitude that they could do very well without any bees whatever. It is true that citrus trees are to a great extent self-pollinating under normal conditions and have not been hit by drouth or a freeze. However, it is under abnormal conditions when the bees save, or should we say, make the crop. It has been demonstrated time and again that orange blossoms pollinated by bees are better able to weather a light frost than those that have gone unvisited.

One of the plants that causes a great deal of controversy out here is the "Eu-ke", or eucalyptus. Some beekeepers swear by it, and the rest swear at it. Many package bee men in the northern part of the state find that eucalyptus in the spring does them more harm than good. The bees have a tendency to plug up the brood nest with the honey, retarding the output of live bees. Some of the package men move their bees to the

One of the species of rabbit brush in the Antelope Valley. While working the alfalfa for honey, the bees obtained much pollen from this species for continued brood rearing.

Unwired combs have no place in desert beekeeping. This unwired comb was leaned against the hive for five minutes and fell out of the frame.

Bees go heavy on propolis out here; are even worse in the desert. If a hive and frames are not scraped occasionally it becomes impossible to replace the tenth frame in a ten-frame hive. Some commercial men overcome this by using nine frames in a brood chamber. The frames are placed up close to each other. An equal space is left between each outside frame and the wall. Burr combs, of course, result with this method. But the nine-frame advocates say it is the lesser of the two evils. The writer believes that unless the frames are kept scraped, it is better to use nine frames. When you need a block and tackle to remove a frame and have to stand on it to get it back into the hive, then your equipment is going to wear out fast. Moreover, the bees are rolled, infuriated, and killed when you pull out a "jam packed" frame. Queens, too, are crippled and killed this way.

Don La Rue prepares to remove some surplus orange and sage honey before moving the bees to the irrigated alfalfa region.

desert or mountains so that they will be out of reach of this plant. Further, say these beekeepers who swear at the "Eu-ke", it stimulates abnormal brood rearing which results in a lot of honey being consumed and wearing out of the queens.

Bob Coates, beeman of Elsinore, California, says that eucalyptus works a hardship on beekeepers in that queens start laying heavily in the fall, then fail suddenly in early spring before there are any queens available to replace them. Moreover, he adds, eucalyptus as a rule comes in so slowly that the bees seldom add any new wax to the comb surface. Instead, they merely place a thin capping over the tough comb surface. A good saw is almost needed to uncap this type of comb. Lastly, he says, a lot of good orange honey is lowered in quality by the mixture of a little eucalyptus honey.

At this writing (December 5, 1945) the bees are working eucalyptus. Some of my colonies in eucalyptus locations have as many as five frames of sealed brood. My scale colony gained four pounds in the past two weeks. When I see all that brood at this time of year it makes me glad that I saved some combs of honey back for possible use next spring when the bees may be in desperate need of help. I have talked to several beemen and they say that "Eu-ke" looks better this year than in several seasons. One commercial man said that it may continue and yield heavy enough for a surplus before the orange comes on.

As against those who move their bees away from the eucalyptus to

(Continued on page 313)

He Does the *Impossible*

By Alexander De Griaznov

A Blind Man Operates 700 Colonies of Bees

The impossible can be made possible with the help of tools powered by iron determination. Seven years of blind valleys, crawling from hive to hive on all fours, fighting the brethern that help themselves quite often with as many as a hundred hives at a time. Several years ago it came—came when I was extracting the cotton crop in my portable extracting house. There were four tons to take off, so instead of quitting, I continued—stuck through.

Then came a year of adjustment, of torture indescribable, of change from the world of light to the world of shadows. There were two ways to go—quit or continue. I chose the latter. By that time out of over 400 hives that I leased out, there were only a few more than 200 nucs returned to me.

But one has to live. With the help of a Seeing Eye Dog which was provided me by the extremely humane and understanding school in Morristown, New Jersey, I steadily regained a foothold in this new life. It is a life of shadows, of silver mist, of touch instead of seeing. How do I examine my bees, and how do I manipulate them? Very simple. Very few realize how much one may depend on simple touch, heft, or odor. With the help of other senses than sight, I can examine, Demaree, rob, find my queen cells, etc.

At present, I am manipulating around 700 hives, a 25-ton steam wax press, extracting my honey, uncapping it, canning it, and doing it all alone. Anything from the operation of a 7-horse steam boiler to a change of truck tire does not bother me. I load and unload my bees, rope them, wire my electric motors; I do everything that any man can do, except drive.

If one in my condition tries to be independent, tries to keep his place in society as a useful member, as a contributing citizen, general opinion says it cannot be done. From the very beginning of my work in the land of the Silvery Mist, I was and still am, advised to sell, to quit, to do something else than my beloved work. Science for the sake of science is art. This has been my motto through all my life. In our practical world, very few understand that there are some persons for whom beekeeping is still an art—an endless field of new discoveries.

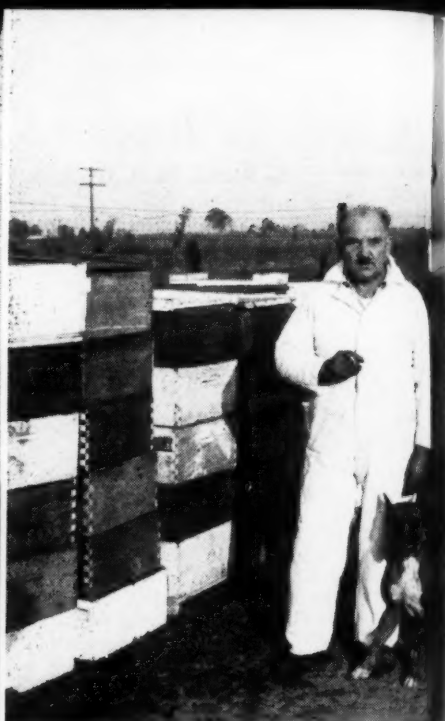
If one dedicated all his life to the study, research, and improvement of a certain subject, a sudden lack of this work, or a sudden termination of it, means a slow and sure mental deterioration and decline. Fear of that deterioration, pride of helplessness, and desire to be useful in the time of war, were the motives that kept me going. I admit, with the present level of morals and ethics of our society, with the misunderstanding of the blind, it is not an easy task to progress. But man can not be robbed of his mind and his iron determination. There are two expressions that I hear quite often: "It can not be done", and "I wonder how he did it; a blind man has no business to be a beekeeper".

Not for the sake of publicity or acknowledgment, but with a sincere desire to be useful to those thousands of our youth that came from this war with my handicap, I am writing these lines. Maybe some will find encouragement and a new impulse to continue after reading about my experience.

The people who think that a blind person can not do and accomplish things that the seeing man can are badly mistaken. The blind can do everything or very close to it, providing that he is left alone, providing that the rest of the world will let him be. Very little help is needed. One in my condition has to be very systematic, has to have a place for a thing, and a thing for a place. A smoker or a veil removed a foot from its usual place means hours of lost time. When the light is gone, one learns to use other senses, mainly hearing and the sense of odor. One who is afraid to fall, to bump his head against a tree or any other obstacle, will never succeed either. One has to adapt himself to the new conditions, new surroundings, find new ways to judge a hive by lifting, touching, smelling, and listening.

Here in California, beekeeping is migratory. This creates a problem of remembering the turns of the auto, the bumps on the road, the odors

Mr. De Griaznov operates the power uncapping knife easily



The Seeing Eye dog helps Mr. De Griaznov in his apiary

of the field; in order to remember the location of your out apiary and a new technique of loading and unloading the bees. I usually string a rope from the truck to the line of bee hives, tighten it on the post about two feet behind them, take a hive and follow the rope. It takes practice to load hives on the truck. One has to feel the edges of the platform with the feet and have a good sense of equilibrium to stay there. One who is not afraid can do it easily with a little practice and determination.

Roping is not a problem if you had roped before in the world of light. One has to visualize to see mentally what is going on, and after a few days there will be no problem. Surely there is a certain amount of risk, but who cares. It is a matter of to do or not to do, to be or not to be.

The manipulation of the hives is one of the easiest parts of my work. I worked my bees from seven years of age, and one who operated them that long most certainly can visualize what is going on in the hive, where is the center of the cluster, the amount of stores, etc., by simply hefting the hive. The nose helps a lot in determination of presence of EFB or AFB. A shake of a frame or an odor of the fresh honey gives the idea of the beginning or ending of the flow. A seeing beekeeper does not realize how much an ordinary heft means to him in his operation. A frame of brood weighs much less than a frame of honey, sealed brood is heavier than open. By touch one learns to determine the open brood from the sealed one.

Knowledge of the construction of the brood cluster will help to locate the middle of the brood nest. When I want to make a nuc, I usually lift my uncapped brood above the queen excluder thus obtaining the young bees needed for the purpose. Dequeening is not a problem if one shakes the bees off the brood nest into an empty hive body and then places the brood in the super above. Next day one will find the queen crawling above on the underside of the queen excluder with a handful of bees. In my condition, one has to sacrifice this handful by carefully shaking them on the ground and stepping on them. Queen cells are easily found by touch. Knowledge of where they are usually found is a great help. One has to shake the frame in order to avoid stings on the tips of the fingers. Robbing is

no problem at all. Heft, and with very little practice one can easily learn to determine how much honey is in the frame. With the help of the rope, one can easily carry or even push the cart toward the truck or trailer.

Extracting and uncapping require the most of effort and practice. One can not learn to uncap with the knife and I use an uncapping machine. I usually space my frames wide and my combs are usually full and thick. Most certainly it can not be helped if some of the frames have spots that are not uncapped properly, but what of it? After pressing the cappings, I melt them in a thermostatically controlled hot room with an electric fan for equalizing the temperature. Two hundred degrees gives me a choice quality of wax and very little discoloration of capping honey.

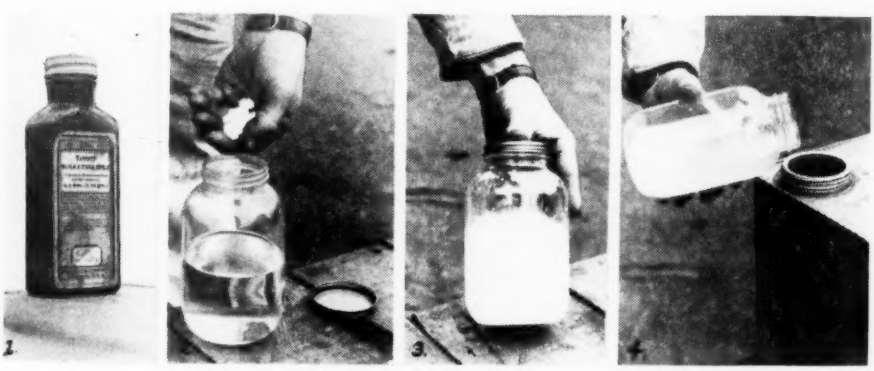
The operation of an extractor is not a problem at all. One needs a cover on hinges. I would not recommend the use of any extractor that does not flop the frames with the basket. The reason is simple—one has to use his ears in order to be sure that the frames have turned over. The honey runs into a settling tank with a float switch attached. This avoids overfilling the settling tank. An ordinary honey pump takes care of the rest. The settling tank is essential from the standpoint of protection of the pump from clogging with the pieces of wood from the broken frames and other articles that get into the extractor. Besides, it gives cleaner honey. With a single burner electric plate I keep the honey warm up to 130 degrees.

I operate a couple of 25-ton steam presses for the beeswax. My boiler is automatic, and I learned even to guess the pressure of its steam by the sound of the steam entering the presses. In this work, my ears are absolutely indispensible. There is to trick in operating the presses. I did this work in the world of light, knowing my equipment, and do it by heart. A finger placed in the can helps to determine the level of the wax in it. From a nine-frame super of good old combs, I usually obtain up to three or more pounds of wax.

In Conclusion

At present, I am absolutely alone so far as the business is concerned. The business requires a pair of vigilant eyes, so I am looking for a helper, preferably a mature beginner, who would be interested to continue with me and learn the business from A to Z. I have a fully established business, up to date plant, a couple of fine wax presses of original design, with which I get up to three pounds of wax per super, and plenty of other equipment ready to go—but I need a pair of eyes.

Fresno, Calif.



MIXING SULFATHIAZOLE IN SYRUP FOR FEEDING

1. To be on the safe side, obtain tablets bearing the label of a well-known pharmaceutical house. The powdered form is all right but requires measuring. Cocothiazole is the drug in liquid form. While it saves the work of dissolving, it is not as readily obtainable as the tablets. 2. Dissolve fifteen ½ gram tablets in a pint of water close to boiling point. Shake thoroughly. There is some chalk in the tablets which does not go into solution. 3. Shake well to assist dissolving. 4. When thoroughly mixed, pour into five gallons of syrup (two parts sugar and one part water) preferably warm. Stir until well mixed.

Stirring the Witches' Brew

By Leon C. Nieb

(Continued from last issue)

We have secured the use of two colonies of bees very badly diseased with American foulbrood from the apiaries of an aquaintance to use in our experiment in determining whether or not sulfathiazole will cure the disease. We opened the hives and took several pictures of the diseased material. Most of the cells in the combs inspected contained rotten larvae or a dried down scale of AFB. One colony was much stronger than the other, occupying about five or six Jumbo frames while the other covered only three standard frames. The weaker of the two colonies had become so discouraged with conditions in the Jumbo brood nest that they moved up into a full-depth standard body of combs that was in use as a super and contained 15 or 20 pounds of honey.

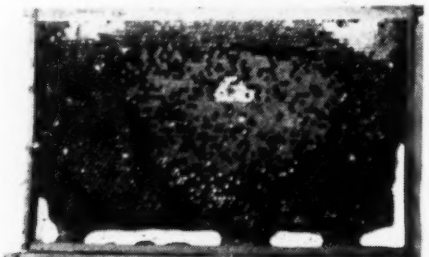
We removed the supers of honey from the strong colony, leaving them with but little honey in the brood nest. The weaker colony we left in the super of honey and took away the broodnest of rotten combs, which truly were in terrible shape. We intend to hive some packages of bees on this foul matter later and feed sulfathiazole to see what will happen. We performed the above manipulations on the 20th of December and fed each colony a half gallon of heavy sugar syrup to which had been added two teaspoonfuls of cocothiazole per gallon. Cocothiazole is sulfathiazole in a strong coco and sugar solution making an emulsion easily mixed without heating and all the other fuss and bother connected with making syrup using sulfathiazole in tablet form.

The diseased matter to be used later for the package bee experiment was sealed up with extreme care so that none of it was available where robber bees could get at it. Entrances on the two colonies under treatment were contracted down to where the bees could guard them well. Bottom feeders in the form of pans placed in a shallow super under the clusters were used.

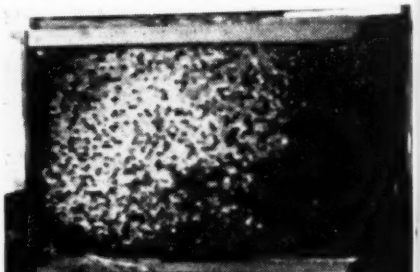
A Severe Test

The experiment was started at the lowest ebb of brood rearing during the year. Not one cell of healthy brood was to be found in the strong colony. The weak colony which had moved up into the super away from the terrible mess below showed a patch of brood on one comb about the size of a man's hand. This did contain some healthy brood mixed with diseased brood. There were no scales, due no doubt to the fact that they had recently moved up from the old nest below.

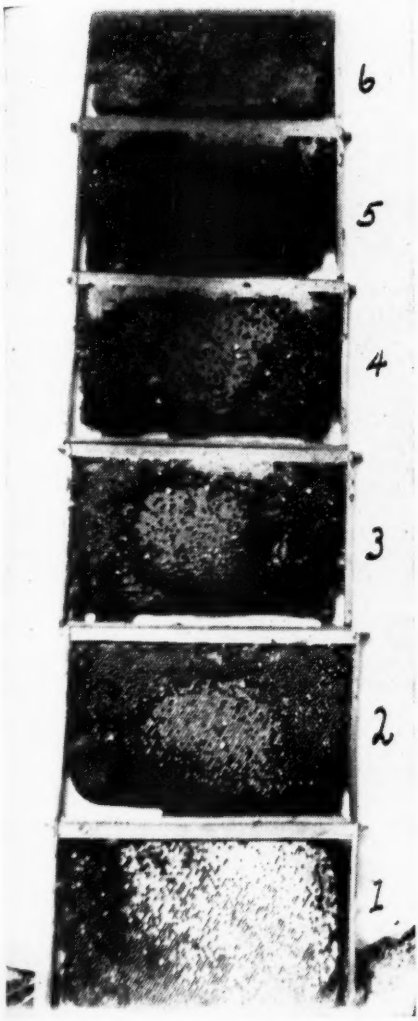
I can truthfully say that I have never seen two living colonies of bees more badly diseased than these two. My sense of smell is not too acute, but I could detect the foul rotten odor at least five or six feet

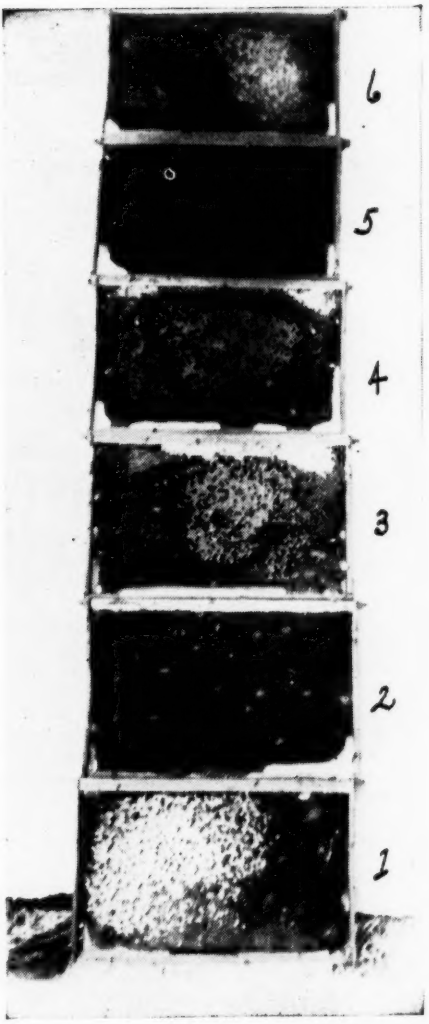


1.—Uncapped cells in center of comb (white patch) show healthy pupae. Vacant cells still contain old scale or healthy young larvae. Sealed brood is surrounded by new pollen. Sealed stores in corners of frames is syrup medicated with cocothiazole



2.—Comb in picture No. 1 was as badly diseased as this one at start of experiment. This comb was near side of hive and bees had not yet cleaned it up due to insufficient bees, combs close to brood being rapidly cleaned up





3.—Pictures 3 and 4 show both sides of the combs of brood nest. Three combs were left out because of lack of room in picture. Comb No. 1 still foul; No.2 well cleaned on one side and filled with pollen, other side had more scales still remaining. 4.—Comb No. 3 still showing a few scales, but no recent deaths from AFB. Brood spotty due to difficulty bees encountered with some tough scales. Comb 4, about same as comb 3. 5, about the same as comb 2. but having less pollen. 6, about same as comb 1, but having many caps removed from diseased cells by bees.

from the hives. For the purpose of this experiment we could not have selected two colonies anywhere with less chance for recovery. However, I do not believe that we could have selected a better time in the yearly cycle of brood rearing for the start of the experiment.

We will continue to take pictures as the experiment progresses, giving the readers of this account the opportunity of standing at our side and looking over our shoulder, as it were. Should the colonies not react favorably to the treatment we will report it as faithfully as we shall if they make favorable progress. More to follow after the next examination.

December 25th: We have again

examined the two experimental colonies. The weak colony was much weaker, had taken only a few teaspoonfuls of syrup from their feeder, and looked as though they could not last another month due to the advanced age of the bees. We decided to bring a two-pound package of queenless bees along next time to strengthen them, as they had a good looking queen. Their feeder of syrup was removed and given to the stronger colony.

This second colony was a revelation. We had fed it six days before and decided that if it showed improvement it would be a miracle because it was in such a terrible, rotten, smelling, and dirty condition. The queen had evidently gotten to work immediately after the first feeding and started a compact brood nest, whereas before she had been scattering her eggs wherever she found a cell without a scale of foulbrood in it. The general morale of the colony looked good. There was evidence of better organization, and the bees looked brighter and peppier. Many of the sealed cells of diseased material had been uncapped and the contents evacuated. Of course, there were many open cells filled with scales of AFB also.

I estimated at the start of the experiment that about seven eighths of the available brood cells were filled with scales. The larvae were very young of course, as the queen had only been laying heavily for a few days. All the larvae and pupae recently dead of AFB, having died before the experiment started, were carried out. There was evidence that the bees had been gnawing away at the dried down scales. The queen was laying eggs in cells that still contained dried scales. It looked rather queer. We intend to visit the yard in about another week, bringing some bees to strengthen the weak colony and some medicated feed for both colonies. In the meantime the pictures have come back from the photographer, and while they are not as clear as we could wish for, they show the disease plainly enough. These pictures were taken at the time we first fed the sulfathiazole.

January 4th: This examination has been a real eye-opener. The weak colony had pulled out all the diseased material and the queen was laying better. We added two pounds of bees to them and we hope that this will make them fully equal to the other in strength. There was not a cell of disease in the colony. Of course, there were no scales to start with, for the colony had just been moved up into this super from the diseased brood nest below which was literally filled with scales. This is the same brood nest mentioned before, which we have carefully sealed up and reserved to install a package or two of bees on later.

The second colony, the original strong one of the pair, had weakened somewhat, due no doubt to the advanced age of most of the bees, but were still in good condition, and I think that we can build them up if the disease does not gain a foothold and drag them down again. That possibility seems at the moment to be a remote one as the following remarks will indicate. The queen had been laying like mad, plastering eggs in every cell. Some cells still contained scales of AFB, or parts of them. Some of the eggs were stuck to the tip of the scale way back in the bottom of the cell. The bees seem to remove the scale by starting at the lip of the cell and progressing toward the back in orderly fashion. Some of the scale must be very hard and tough as I could see that they had been having trouble with it. I noticed a number of loose eggs laying on the lower cell wall which looked as though the bees had loosened them in their house cleaning operations when removing scale and polishing cells where the queen had carelessly placed eggs in dirty cells. All cells containing young larvae had had all of the scale removed. The sealed brood was not even, evidently because the bees had had trouble removing the more stubborn scales. I made a rack to support the combs and took pictures of the brood nest, shaking most of the bees from the combs. One picture shows where I removed the caps from a patch of sealed brood a little larger than a silver dollar. Not one diseased cell was found to be either in this patch or in any other sealed cell which I examined. The brood had advanced in the pupal stage to where the antennae were well formed and the eyes were a pinkish red in color. The combs presented a grotesque appearance with scales of AFB scat-

(Continued on page 309)

Live and *Learn*

By Propolis Pete

A swarm in May is worth a load of hay. So goes the old jingle. And to me, a swarm in May is worth exactly that—I don't want any hay.

Looking back over my beekeeping experiences, I find so many things that I didn't do, or did do when I shouldn't, that if I told you about them, this issue of Gleanings would be full from cover to cover. Sufficient to say that I did everything that the book said that I should do to prevent swarming. Maybe my trouble was that I didn't do it soon enough. So, instead of holding back the fever, I was aggravating it.

Frankly, I can't see that I am doing anything different now than I did ten years ago, unless it is that I don't fuss, don't worry, and do what I have to do, before it is necessary to do it. Something is responsible for the fact that I seldom have swarms now, whereas I was constantly in trouble during the last half of May, and the entire month of June.

I clipped queens, gave plenty of room, gave plenty of ventilation, installed new queens every year, followed any theory that seemed to be sound and some that seemed to be unsound, and still lost many swarms. I have the bee fever too strong to get discouraged. So four or five years ago I said to myself "The heck with worrying about it. If you lose them, you lose them, and that's that". Whether that is the reason or not, I haven't been bothered with swarming since. Oh yes, the bees start cells sometimes, but when they do I perform certain magic tricks, and then they don't want to swarm any more. Maybe what I do won't help you, but then again, maybe it will. Try and see.

The most important thing is to keep your shirt on. Possibly most of the swarming trouble of beginners is caused by the fact that they get rattled. Don't worry about it. It's a natural function like birth, without the pain or responsibility. I can understand getting rattled under the circumstances, but the worst that can happen is the loss of the productive part of a colony for this year, with a good chance that the remaining part will build up to be the best colony next year.

Let's go through the swarming season in my yard. The fever starts long before you are aware of it. So, from my very first visit in the spring I aim to check it. Since I winter in two bodies, the queen invariably starts laying in the upper one. So, when I lift that body off and find brood in the lower, I put the top body back on the stand and what had been the lower body on top of it. The effect of that is to give the bees an almost empty body on top, spurring the bees to further activity and keeping them busy trying to build up the top part of the hive. That is the natural place for bees to work, and if they are not crowded, and the bees are busy up there, they are not likely to think of moving just yet.

A week or so later, if they are working there nicely, I'll give them a third body. Sometimes I find that they have advanced so far on the first visit that I not only reverse the bodies, but give them the third body at once.

Supposing several weeks later I find cells anyway. Then I do one of several things, depending on which is the most convenient. If I have some very weak colonies, I might change places with the one that shows intentions. The effect of this move is to have the flying bees from the swarming colony (they will return to the old stand) strengthening the weak colony, and the brood from the swarming colony deprived of its field force. In either case neither hive is likely to swarm, but you have to be careful not to switch a strong colony to a not so weak colony. Otherwise you might find yourself with two swarms.

Sometimes I use the old Demaree system. That does the same thing without involving two hives. Space is too limited here to describe that.

I don't bother clipping queens any more, or putting the hive up on blocks, or any of those interesting maneuvers. They never seemed to make any difference to me so far as swarming was concerned. So far as ventilation is concerned, it is only about five seconds work to stagger the top body a bit to give ventilation. On the question of clipping the queen, I always managed to damage the queen somehow in my clumsi-

(Continued on page 307)

Honey Preferred

By Mrs. Benj. Nielsen

Browsing through a recent issue of Reader's Digest, I came upon an article, one incident of which impressed me strongly. If this idea were applied to honey it might well prove the boost that would establish continued use of honey long after sugar rationing is a vague memory.

Honey apple bran fritters.—Photo courtesy Kellogg Co.

Indeed, it might well put honey on the preferred list rather than on the substitute list where it now balances in so many instances. It seems the consumption of Scottish oatmeal, the country's most important food source, has seriously declined. Appealed to for a subsidy, Scottish Secretary of State Johnson decided that the situation should be tackled from the market end. Consequently, with the 100 pounds appropriated, a nation-wide contest was conducted among domestic students for the best recipes using oatmeal with the idea in mind of teaching Scottish girls to cook a Scottish product so well that it would be preferred to the French recipes that predominated in the domestic science courses of the schools. Over 20,000 students entered the first contest and after two years of such campaigning, consumption has been more than quadrupled.

Why not apply this idea to honey? Something to think about, isn't it? For those leaner years we suspect may be ahead for honey! And what better place to start putting honey on the preferred list than through the youth of our land!

Honey Apple Bran Fritters

One cup sifted flour, 2 teaspoons baking powder, 1½ teaspoons salt, 1 egg, ¼ cup honey, ½ cup milk, 2 teaspoons melted shortening, ⅔ cup bran, 3 or 4 apples, 2 tablespoons powdered sugar, and 1 tablespoon lemon juice.

Sift flour, baking powder, and salt together. Beat egg slightly, add honey, milk, and shortening. Add to dry ingredients; mix until smooth. Stir in bran. Core and pare apples and cut in ½ inch slices. Combine powdered sugar and lemon juice and pour over apples. Dip rings in batter, completely coating. Fry in deep hot fat 375 degrees F., until brown, 4 to 6 minutes. Drain on unglazed paper. Serves 8.

Honey Tea Doughnuts

One egg, ⅓ cup milk, ⅓ cup honey, 1⅓ cups sifted flour, ¼ teaspoon salt, 1 tablespoon melted fat and shortening for frying.

Beat egg, add milk and honey and beat together. Sift dry ingredients together and add to liquid, mixing to blend thoroughly. Stir in 1 tablespoon melted fat. Shortening for frying should be melted in a deep kettle. Dip teaspoon into hot fat that will brown a cube of bread in 60 seconds. Then dip hot spoon into batter and quickly immerse the spoonful of batter in the hot fat. Repeat with small dips of batter being careful not to overcrowd. Turn balls when they come to the surface. Fry 3 to 5 minutes turning only once. They should be a delicate brown. Drain on absorbent paper. Makes 18 small servings.

Honey Pecan Butterballs

One half cup butter, 2 tablespoons honey, 1 cup sifted flour, ½ teaspoon salt, 1 teaspoon vanilla, 1 cup finely chopped pecan nutmeats, and powdered sugar.

Work butter until creamy, stirring honey in gradually. Add remaining ingredients and mix thoroughly. Chill 1 hour. Then form into balls the size of small walnuts. Place well apart on greased baking sheets and bake in a slow oven, 300 degrees F., about 40 minutes, or until delicately brown. Roll at once in powdered sugar. Let cool and roll again in powdered sugar. Makes 24.

From the Field of Experience

CAN BEES FORETELL THE WEATHER?

By George S. Whittaker

An acquaintance of mine owns a number of colonies of bees that appear to be a strain of Caucasians. They have a habit of drawing a curtain of wax and propolis down over the hive entrance in late autumn, presumably preparatory to going into winter quarters as comfortable as possible. The curtain is gradually gnawed away as the days become warmer the following spring.

Now herein is a mystery. We found that during the fall of 1944 those bees sealed their entrances almost completely shut, leaving only a small opening not over one half inch wide. The winter season that followed was damp and cold. Now this last fall those bees left their entrances wide open, drawing down no wax curtains whatever. We have just emerged from one of the driest, mildest winters in California history, with approximately one third the rainfall of the preceding winter and about twice as many sunny days.

Did those bees through some strange intuition, unknown to their keeper, sense the type of season ahead, or did it just happen that way? Certain species of mound-building ants are said to prearrange their nests to correspond to the severity of the winter ahead, so why not the honeybee? Personally, I believe future research will reveal the bee possesses many such God-given intuitions, as yet totally unknown to man.

Los Angeles, Calif.

[Some years ago at the beginning of what appeared to be a promising honey flow queens suddenly curtailed their egg laying. A little later the flow stopped. Did the bees know what was about to happen? It would seem as though they did, but we are not sure.—Ed.]

CHASING AWAY BEE EATERS

By C. H. Pease

In your February Gleanings, page 94, George P. Georghiou, Cyprus, asks for a way to keep bee-eating birds away from his apiary.

Here's how we keep not only bee-eaters but all other birds out of our berry patch in the garden, and perhaps it may work in the apiary. As taxidermy was one of my hobbies for many years I placed a mounted Great Horned Owl in an old parrot cage, with a heavy cloth cover to keep rain off the owl, and hung it from a limb of a nearby tree close to the berries. As all smaller birds are "scared to death" of owls they don't like the looks of that bird in the cage, and get their berries elsewhere. When the berry crop has been harvested the owl is taken in to await the next season. This protection is automatic and beats standing on guard with a gun.

Canaan, Conn.

BEES IN BALKANS

In the Balkans, beekeepers have always been as busy as their bees, and before the war, bee raising was a major industry. With no sugar cane and practically no sugar beet, the Balkan peoples have come to rely heavily on honey as a principal sugar source. But bees too were a war casualty, and thousands of beehives were destroyed.

Today UNRRA is helping rehabilitate the bee industry, shipping bee supplies and spreading modern methods of bee culture. Already under procurement are 41,500 bee hives, 800,000 sheets of wax comb foundations, and 10,250 lbs. of galvanized wire for this purpose. The supplies are going to Greece, Albania, Yugoslavia, and the Dodecanese Islands.

During the war, military operations, wanton Nazi destruction, and the wear and tear of time sharply reduced the number of bee hives. With many of the farmers fighting bees died in swarms of the diseases to which they are prey unless properly cared for. Then, in the past year, much bee starvation resulted from the drought, since blossoms to yield nectar were so few.

Besides furnishing honey, bees figure in cross fertilization of cereal and forage crops. Replacement of the hives is thus an important aspect of general agricultural rehabilitation.—UNRRA, Washington, D. C.

QUEEN SUPERSEDURE

By Allen Latham

Many religious beekeepers find it very simple to explain many of the habits of bees by simply saying—"That is the way God made it". My religious beliefs forbid me such an explanation. I believe that bees were just as free agents from the start as we human beings. We had to do our own developing and so did the bees. Sometime in the remote past our ancestors chose to make better uses of their brains than did their close cousins—numerous kinds of monkeys and apes.

It is exceedingly difficult to portray clearly how the honeybee developed habit after habit until it is the wonder-insect which we respect so well. And yet we try to explain this and that act of the bees whether or not we know anything about it. So I have been asked to write and explain the supersedure of queens—and I know almost nothing about it. How the bees can tell that a queen should be superseded I know not—but I do know that they sometimes supersede a perfectly fine queen and at others tolerate a worthless queen until the colony dies out. We will, however, concede that the bees are usually right.

One of the aspects of supersedure is its contrast with the building of queen cells during swarming fever. Can bees count? In swarm fever they may build from six to 100 cells. I actually counted 75 in a colony of Banats. In supersedure they seldom build three or more, and often only one.

Then the supersedure cell is so different from the normal swarm cell. It is worked over by so many interested bees that it acquires a very heavy wall with a much pebbled surface. By the way, have you ever analyzed that pebbling? It is simply the bases of worker cells, and many times near the top of the cell the worker cells will have slightly raised walls.

Possibly the most remarkable thing about the supersedure cell is the fact that the occupant when it comes out apparently never seeks a competitor, unless we accept a second supersedure cell. In the case of a swarm cell the out-coming queen seeks a fight to the death. Seldom does it happen that a supersedure virgin kills her own mother. Did you ever know a supersedure occupant of a cell to sound out a challenge? I never did. It may happen so far as I know.

I have known supersedure queens to be themselves superseded within three or four weeks. It is not true that a supersedure queen is always an excellent queen. If the mother queen is very feeble the result is apt to be a poor young queen which the bees will soon get rid of.

What becomes of the old queen after supersedure? She may disappear in a short time or may last a long time. I once had a breeding queen superseded in the fall of the year. The following spring both mother and daughter were still alive on the combs. I think it was Demuth who said he once had mother, daughter, and granddaughter on the combs at peace together.

Of late years when I find it difficult to care properly for my bees I have left them largely to practice supersedure, but I advise you who have time and strength to do so to requeen at least every other year and allow no poor queens to be in your hives to be superseded.

Norwichtown, Conn.

SIXTY FIVE YEARS AGO

By S. H. Burton

A friend of mine presented me with Vol. IX complete of Gleanings for 1881, and I am as proud of it as a boy with a little red wagon. And is it quaint---? Grape sugar is advertised for feeding bees and Waterbury watches are highly recommended. Chaff hives are still in vogue and one piece dovetail sections are advertised at $4.50 per thousand. Beeswax is quoted at 21 cents a pound and best white honey on the Cleveland market was quoted at 10 and 11 cents a pound. This sounds like the WPB board went back to 1881 to get their ceiling prices. A. I. Root was giving a smoker away to those who would quit tobacco, and bees were selling at $2.00 a pound. It's lots of fun to see what our fellow beekeepers were doing 65 years ago.

Washington, Ind.

SECOND GLANCES
By C. M. Isaacson

Efficient spring management depends not only on attention to detail, but also proper **and** timely planning (page 193). Mr. Jessup has many good points in his article. If there is no fire danger, and no reason to believe bees short of food, it is wise to delay unpacking until as late as possible. Reversing brood nests, equalizing stores, bottom examination—all are worthwhile kinks, and it is of course true that dark combs are always preferable for added room. Queen reservoir nucs are of real value—and if made early enough, can be used for increase. The Cale plan for checking swarms is of especial benefit with the larger hives where Demareeing is difficult to practice. And that idea for painting in the apiary is very good, for those pieces of equipment we intend to haul home and paint, too often never remain home long enough to do the job.

Early divisions can be made profitably when colonies have built up rapidly—in fact, with positive benefit to a strong colony, for it holds it back just enough to check swarming or loss of morale. With colonies such as Mr. Shoemaker describes (page 196) splits could have been made in March if desired (in his locality). But year in and year out, I do not believe he will find a single brood nest desirable—even users of larger hives use food chambers quite often.

Obtaining good combs is worth considerable time and effort, and when it can be done by feeding of comparatively valueless honey as Mr. Whitcomb's article describes (page 198), it is a fine thing. It is interesting to note that even the highest ratio of wax produced to honey fed (almost nine pounds honey per pound of wax) is still far below the figure of 20 to 1 once accepted. Beekeepers in other localities where good combs are hard to produce would do well to study this method with care. Note that **continuous** feeding is required.

Starvation is a disagreeable word. Yet, as R. E. Newell says, it does sometimes happen even to **our** bees. That idea of detecting it by watching for symptoms at the entrances is good. Anything much out of order in the colony will show there, and measures can be taken to correct it without going through the whole yard when time is pressing. But if possible, enough should be done at each examination to tide the bees over until the next complete once-over. When starving colonies are found, do as the article says—feed heavily (page 203).

There is danger in sulfathiazole. Until further experiment definitely proves it to be **more than a deterrent** for AFB, much caution should be used in advocating its use. It is true that several beekeepers have stated that it has kept them from being wiped out of the bee business, but in the hands of those who may be apt to substitute it for careful beekeeping, it may do much harm. If it actually is all that has been claimed for it, no objections will stop its adoption (witness the "acid treatment" for honey removal)—otherwise words of caution may prevent a bad mess. I know it is not effective in all cases with poultry diseases— different conditions produce different results (page 204).

Beekeeping has its smiles. If you do not believe it, read **Live and Learn** over again—you'll laugh the second glance, too. And yet Propolis Pete mixes in a lot of information with his humor, if you have never handled a package of bees before (page 207).

Darkness does keep bees quiet. As in so many things, Allen Latham is right in that. But the objections that Editor Root lists against an all wood cage are sound ones—scarcity of material, heavier weight (and consequent increased shipping costs), and difficulty of examination, are all valid points. And all in all, the biggest majority of bee shipments come through pretty well under the present system.

Collecting pollen in combs is a neat trick—saving a lot of work, and those combs should be worth very much in the spring (page 210). It will work—with a queen above the excluder, much pollen will be stored below. It is also well to save any especially heavy pollen combs when extracting the crop. I always put these in supers by themselves, for use next spring.

From North, East, West and South

NORTHERN CALIFORNIA, April 5

Weather: The weather of March, in many parts of California was disappointing to beekeepers. Here in the Bay Area, the eucalyptus was blooming and, if the bees had two hours a day to work, they stored a surplus and built up rapidly. The month was dry and the weather cool, cloudy, and windy. Many days bees would be kept in their hives all day. In the northern part of the state the snow was heavy all winter. This was encouraging to beekeepers who had bees there or were in the habit of moving in for the manzanita and other early honey plants that were being protected by the snow. About the middle of the month there was a melting of the snow and bees were moved in. They were no more than located when a heavy snow fell the last of March, and stopped honey production for a few days. Snow goes in a hurry in California and we will likely hear a good report from that section when extraction is over. The last five days of the month were rainy. It was March.

Condition of Bees: Last month we reported bees in good condition but added that it was too early to report on honey production. Bees are still in good condition in most of our territory. Where bees were poisoned by spraying or the dusting of crops, they have been slow in building up. Some may get a late crop. That will depend very much on the beekeeper. The beekeeper who knows how can do much to encourage poor bees. Beekeeping improves as beekeepers improve.

Swarming commenced in the Bay District March fifteenth.

Miscellaneous: In the March issue of Gleanings, L. L. Andrews, writing from Southern California, reported a loss of 8,000 colonies of bees in a single valley there, caused by poisons used by fruit and vegetable growers who use the plane for dusting their crops. Similar losses in the northern part of the state mean a very heavy loss altogether for the beekeepers of California.

Dr. J. E. Eckert of the University of California, writing of this danger to the beekeepers of this state, says: "It is probable that a greatly increased acreage of all crops will be treated with DDT sprays or dusts this season and we urge all beekeepers to become familiar with the spray and dusting programs in the localities where their apiaries are located and to observe carefully the apparent effects of DDT—and other insecticides—on their colonies this season". He therefore strongly urges every beekeeper to **report** to him and also to their County Agricultural Commissioner, even though there is no apparent injury to their colonies.—Cary W. Hartman, Oakland, Calif.

SOUTHERN CALIFORNIA, April 3

Weather: It is still delightfully cool. After three months with the lightest rainfall within the memory of many of the inhabitants of Southern California the last days of March and the first day of April gave us some nice rains. Prospects are much better for honey. To be sure we have reservoirs full to over-flowing so will not lack for irrigation water, but it is the great unirrigated sections that furnish the bulk of the honey in our good years. Honey crop? Who can say?

Prospects have changed materially for the better within the past week and it now looks like at least a part of a crop. There are so many migratory beekeepers today who cover the country far and wide that they will get the honey if there is any to be had.

Market: Beekeepers have been getting some of the nicest letters. Men who have been buying for years want to be sure to be remembered. It looks like the most active market we have had for years.

Miscellaneous: We receive many

letters asking for information about beekeeping, honey crops, bee locations, average yields, where to locate, and many other things pertaining to the beekeeping industry. Usually a good way, if you are coming to Southern California, is to look around and buy a small apiary already located. Then as a fellow becomes acquainted he can adjust himself to the general conditions. To recommend any certain locality might be doing a great injustice to beekeepers already located. We usually sell our climate along with our other attractions. If you are coming, better look things over well before locating. Bees as well as all other property have advanced in price very materially the past few years.

Bees are in good shape in most apiaries. Beekeepers are meeting with pleasant surprises in many cases at the amount of new honey stored in some apiaries. Evidently there is considerable nectar in the blossoms that are out. Eucalyptus, wild lilac, and other early bloomers have evidently yielded well, considering the chance they have had with the cool weather and light rainfall. One beekeeper took 500 pounds off one apiary to lighten it for moving. Never give up until the returns are all in.

We have spent several days in the great Imperial Valley since our last letter. While the weather is most delightful so far as climate and comfort are concerned, we could not keep from noticing the backwardness of crops. Some say as much as a month or even six weeks. We have visited the valley many times in years gone by during the last days of February. One of the sights was the thousands of acres of flax; great sheets of purple blooms for miles. Today we see little or no bloom. It will be some time yet before it will be in full bloom.

Flax is classed with honey producing plants in Germany but is said to furnish little nectar there. While this is not a citrus district still there are a number of groves of orange and grapefruit trees and they are in full bloom. We saw the bees busy on them and we could smell the rich perfume that filled the air as we passed along the highway.

The cherry trees are in full bloom in the Beaumont district which we pass through at an elevation of some 2,500 feet. The almond trees are past blooming and the peaches are yet to bloom. These all help the bees in building up in the early spring when the weather is favorable but this season has been too cool for best results.—L. L. Andrews, Corona, Calif.

NEBRASKA, April 6

Weather: For the most part Nebraskans have had little reason to winter in California for the winter has not been a severe one. Only twice have we had to shovel snow; one of these storms coming on Christmas eve so that we were truly snowbound Christmas day. We minimized the possible ill effects of a big Christmas dinner by digging out of the drifts. As is so often the case with the open winter little moisture has been received. February was the third driest month in the weather history of our state and some quite severe dust storms came our way. Two most welcome gentle soaking rains fell in March, putting top soil in good condition for early gardens. Then April 4, a reported 63 mile an hour wind rapidly evaporated top soil moisture, leaving a hard crust. The heavy sifting of dust into the houses brought back vivid recollections of the drouth years.

We have had an unusually early spring, hastened by unseasonably warm weather. Indeed, one day in March the temperature reached 88 degrees. The sturdy dandelion bloom appeared early in March and quite a little of the fruit bloom has passed the danger of frost. In welcome contrast to last spring's cloudy damp, cold days, the weather has been warm and sunny so that bees have been able to take full advantage of the heavy fruit bloom and dandelion offerings. As a result, beekeepers have not found it necessary to do much sugar feeding.

Condition of Bees: In so far as we can learn bees are in fair to good shape at this writing, building up

rapidly on fruit bloom. Despite our open winter, two prolonged cold spells in December resulted in starvation to even well-stocked hives, for the bees could not move to stores. Winter loss runs from light to medium heavy.

Prospects: Despite present need of moisture, prospects are bright for a good honey crop this year. Our mainstays, the deep rooted alfalfa and sweet clover plants, are in good condition.

Market: Sales continue to be brisk with larger quantities in demand. Little honey is to be found in the stores, and this little is packaged in small expensive sizes. The producer catering to retail trade is having his inning. More honey is being used in the baking industry.

Miscellaneous: For several weeks we have had numerous invitations to place our bees in sweet clover and alfalfa fields; a marked increase over last year. Not too long ago, we advertised fruitlessly, drove long miles to locate pasture, used not a little sales talk and paid well for the "toleration" of our bees. Now we can choose the nearest and best. Do you suppose that some day the beekeeper will actually be paid for the truly invaluable pollination services his bees render?—Benj. Nielsen, Aurora, Nebr.

FLORIDA, April 2

Weather: We have had fairly good weather for bees through February and March. While we have had some cool weather, we have had no killing frosts. There has been plenty of moisture in most sections of the state. As a matter of fact, a few sections have had a little too much rain.

Condition of Bees: Bees are in good condition. In West and North Florida, they have built up strong colonies on spring ti-ti, and a good many colonies will produce a fair surplus from this source. Indications are that the bees will be in fine condition to gather a crop of tupelo honey.

Reports received from the citrus belt indicate that a fair crop of orange honey will be produced this year. Where the bees were in good condition at the beginning of the flow, they have stored a good crop of orange honey. On account of plenty of moisture, gallberry is looking fine and the bees should gather a good crop from this source.

Market: The demand for honey still exceeds the supply. Most of the beekeepers have their crops sold or contracted for. The market for queens and package bees continues strong. Beekeepers who produce queens and packages have booked all the orders they can fill. All beekeepers everywhere should keep in mind the fact that all of the beekeepers' associations will meet in Tampa in January, 1947, and everyone should plan to attend this meeting.—Robt. E. Foster, Apiary Inspector, Gainesville, Florida.

MICHIGAN, April 12

Weather: Crazy, as it has been for three seasons past. Summer in March—winter after fruit buds open — bees booming a month early, then declining when they should be at their peak. The past week we found hundreds of colonies with large brood nests, fair supplies of honey, little pollen, eggs and sealed brood only—**no larvae**. Some had begun to pull their brood. Near freezing or below freezing nights.

Bees and Plants: Population of colonies above normal, near swarming strength in some cases with eight weeks to wait for the clover flow. Unless the weather permits nectar secretion by fruit bloom, dandelion, and other spring plants, the feeding problem may be as serious as last spring which was the worst in memory.

Clovers have wintered well and if there is little heaving from frost during the next few weeks the prospects are fair to good. Sweet clover acreage is much reduced. Alfalfa has not yielded since 1940. Too cool and wet. In recent years the weather has favored the light soils areas of Michigan and the heavy soils areas have been far below normal, about one third of a crop.

Miscellaneous: During the past three months I have held over 30 beekeepers' meetings throughout the state and have attended several meetings of fruit growers. Because of the heavy loss last spring from spray poisoning most beekeepers are reluctant to rent bees for pollination this year. Many have refused. Fruit growers realize the seriousness of the situation and show a disposition to correct the trouble. In one county a group of fruit growers has purchased about 200 hives of bees and have hired a beekeeper to operate them. Others are buying packages to be cared for by beekeepers.

The noisiest word in beekeeping today is sulfa. Most of the noise comes from areas where the least progress has been made in foulbrood control, from beekeepers come lately to commercial beekeeping. Most of the old timers shake their heads and allow that sulfa could be the biggest curse of the late crop of gadgets.—R. H. Kelty, East Lansing, Michigan.

MISSISSIPPI, April 3

At this time bees are in fine condition at State College. The weather has been very favorable with almost no cold in March. Colonies that had plenty of stores and were requeened last fall now have two bodies of brood—10 to 14 frames. White clover and black locust are in bloom now with smooth vetch coming in within two weeks. Unless a cold rainy spell occurs, a good flow from clover and vetch is expected.

Package shippers are booked to capacity and cannot expand operations due to lack of labor and supplies—Clay Lyle, State College, Miss.

TEXAS, April 5

Weather: Rainfall during March was rather variable, ranging from very light to heavy showers in many areas. Locally, rain was above normal and soil moisture is satisfactory. Temperature was above normal and near summer temperature prevailed during the past week.

Bees and Plants: Bees built up rapidly to populous colonies. Spring annuals which at first developed slowly, quickly reached the blooming period and pollen was gathered in abundance. Beekeepers who were feeding pollen substitutes suddenly found the bees refusing to store this substance. Although some nectar was gathered daily, rapidly expanding colonies drew heavily on reserve stores. Swarming was reported the last week in March.

In Southwest Texas the major honey plants consist largely of native shrubs and trees. Mexican persimmon and guayacan came into blossom at the usual time. Colonies have gained up to 25 pounds from these sources. Catsclaw looks promising. Guajillo and mesquite are coming into bloom in some areas but are not so promising where rainfall has been scant for some months. As a whole, prospects are for at least a normal crop.

Markets: Texas honey has been sold out for some time. With a new crop expected in the near future inquiries are coming in daily from honey buyers.

Miscellaneous: During the past month two of our old beekeepers were called to their eternal rest. Mr. J. A. Simmons, who operated many colonies in the Nueces watershed for nearly 50 years was very active until a few months before his death at the age of 72 years. Mrs. M. B. Hinton, of Kenedy, Texas, passed away on March 17. For 38 years Mr. and Mrs. Hinton were engaged in extensive beekeeping in Karnes and adjoining counties.

Mr. L. F. Meier, Chief Foulbrood Inspector, resigned March 1 to enter private business. Mr. John R. Walker succeeded Mr. Meier.

On April 2, the North Texas Beekeepers' Association held a well attended regional meeting at Roxton, Texas. This is a very progressive farming area where sweet clover was introduced many years ago. There are many good beekeepers and an active local association.

On June 10 and 11, the Texas Beekeepers' Association will hold its annual state meeting at Greenville, Texas. This should be the best state meeting in years and all who attend may be sure of an interesting program and a good time. President Hugh Shofner and a local committee are leaving nothing undone to make this the best meeting ever and a large attendance seems assured. The program will be announced shortly.— A. H. Alex, San Antonio, Texas.

TENNESSEE, March 28

This generally will be a report on southeastern Tennessee bee conditions. Weather so far this year has been ideal for bees to build up. They started brood rearing about February 10 and have expanded since until now brood areas are in seven and eight frames, even 10 and 12 frames in colonies wintering with large clusters of bees and plenty of stores. It has been cloudy for three days, however, with rain last night.

Fruit bloom is about over. Plum, peaches, and pears are all dropping petals. Apples are at midbloom and will need additional beework to set a good yield of fruit. Ornamental shrubs, mustard and redbud have been yielding helps in nectar and pollen—the right kind of stimulation for buildup period. One field of white clover near here is starting to bloom, and I'm sure crimson clover will bloom two weeks earlier this year.

Colony loss in this area will run about 20 percent. This can be blamed on no fall flow and close robbing.

Commissioner of Agriculture, O. E. Van Cleave, is interested in the beekeepers in this state. There are three deputies helping State Apiarist John M. Amos combat American foulbrood this year. More funds will be needed to expand this inspection service than are available, however, and it is hoped that this will be granted at the next general assembly.

New officers elected at the State association meeting held at the Hermitage Hotel in Nashville, February 25 placed H. L. McClain of Morrison as President. John M. Amos remained as Secretary-treasurer. George H. Rea, a speaker at this meeting, made the prophecy that in 10 or 12 years Tennessee would be back among the first 10 leading bee states of the U. S.

Pollen substitutes were tried by beekeepers all over the state this spring—and the feeding continues. Where mixtures were not made too dry the expected success was had. Such feedings will be a "must" in future springs.

Honey crop prospects are fine where plant conditions and rainfall are concerned.—Carl M. Teasley, Apison, Tenn.

BRITISH COLUMBIA, April 1

A cold late spring could bring catastrophe to many B. C. beekeepers this year as practically no sugar is being allowed for feeding the bees. The only concession to date is an allowance of five pounds of sugar for each package imported to replace a colony destroyed the previous fall. Returned veterans are being granted sugar sufficient to carry packages through to the honey flow but only for a number equivalent to the number of colonies maintained at the time of enlistment.

Here in the Interior fruit belt conditions are not serious for those who left a fair amount of honey with the bees last fall as our feeding troubles are over with the first cherries or dandelions that blossom.

But despite sugar shortages and the withdrawal of the subsidy on imported packages the number of packages on order seems to be at least as high as in 1945.

With abundant snowfalls of the past winter moisture conditions here in the drier portions of the province are more satisfactory than for the last three years and should get us off to a good start towards a good crop in this year of 1946.

Greatly increased interest is being shown by orchardists in the use of honeybees for orchard pollination due to the fact that for the past few years fruit crops have steadily declined and scarcity of bees is being recognized as at least partly responsible.

We are breaking new ground in this connection with one area already organized at Oliver and another in process of organization near Kelowna, the two totalling several thousand acres of orchard under cooperative pollinization schemes.

All growers in each area contribute on an acreage basis and funds so raised are turned over to beekeepers as rentals for colonies brought in and distributed to strategic locations for the blossom period.

An advantage to the beeman is that a condition of such an arrangement is that there be no application of poisonous sprays without due notice. Those orchardists with late varieties of apples will see to it that their neighbors will not be in too great a hurry to spray.

An interesting development in the spray situation is that the use of lead arsenate is now being officially discouraged with chief reliance being placed on cryolite in codling moth control. DDT, nicotine sulphate, and phenothiazole are also being tried experimentally, and results will be of vital interest to our industry.

We in B. C. are fortunate in that our Provincial Department of Agriculture in the persons of both the Minister and the Deputy Minister have been actively helpful and cooperative.

Dr. K. C. MacDonald backed experiments looking for a suitable bee repellent and the Department has also spent considerable time and money in the development and production of a color film entitled "The Bees Workshop" showing many beautiful scenes of orchards in bloom and general activities of the honeybee with special emphasis on the value of the bees as pollinizers.

This film has given untold publicity to the honeybee and in the hands of Mr. W. H. Trumbull, Asst. Prov. Apiarist, has, in the past year, been shown over 450 times throughout the province and is well worthy of a wider circulation.—G. G. Pearcey, Kelowna, B. C.

ONTARIO, April 6

Weather: Contrary to the general opinion that a late Easter means a late spring, here in Ontario it looks as though we will have a repetition of last year, which was an exceptionally early spring.

March was very mild with no real cold weather and bees carried pollen and a little nectar from soft maples on March 19, the earliest on record. April to date has also been milder than usual, but during the last few days it has turned cooler and we are hoping that it stays that way for a while so that the fruit bloom and other things will not come out so early, to be almost surely frozen by later frosts that are sure to come during the last of April and early May. That is what happened a year ago, and the total failure of the apple and other fruit crops is still a topic of every day conversation.

Conditions: Winter wheat and the clovers have wintered well, but wheat in particular has deteriorated badly during the past week or more, as we have had drying winds and no moisture to speak of for about six weeks.

All our apiaries have had a hasty look-over to close up any dead colonies, see how they are for stores, and examine any very weak colonies so as to be sure none will be robbed out. As to weak colonies, we rarely have very many in that class now, although 30 or 40 years ago, just how to manage weak colonies was a live subject for discussion in the bee journals of that date.

In some 25 or more apiaries, we do not find a dozen colonies actually dead, but, of course, we will be sure to find a number queenless when a real examination is made.

Miscellaneous: Even if sugar is hard to get at present, and last year's honey crop was a near failure in most parts of Ontario, evidence of the tremendous interest in beekeeping just now was much in evidence last night in Toronto when the spring meeting of the Toronto and York beekeepers was held on the premises of the Ontario Honey Producers' Cooperative Association. Some 200 were present and the Dominion Apiarist who was present said it reminded him of the meetings held by the parent Ontario Beekeepers' Association.

As mentioned in last issue of Gleanings, no subsidy will be paid this year by the Canadian Government on package bees. To help out a bit for this, honey ceilings are advanced one cent per pound. This will mean that bulk honey can be sold for 16 cents per pound, container supplied by customer, in lieu of the 15 cents that was the ceiling a year ago.

While the writer may be in a minority among beekeepers in expressing the opinion that this price is too high, we honestly believe this to be true. Just as soon as sugar supplies get plentiful and jams, syrups, etc., are in full supply, there is bound to be a reaction and people will not pay so much for honey when they can get other sweets at a lower price.

Editorials

Bees Short on Stores An early spring such as we have had this year encourages early brood rearing, which in turn uses up a considerable amount of stores. When an early warm spell is followed by a long cool spell which keeps bees in their hives, colonies that do not have an adequate amount of stores may starve.

It seems probable that some bees throughout the country have starved during the prolonged cold spell which has been prevalent in some parts of the North.

This condition emphasizes the importance of reserving an abundance of stores—honey and pollen—for each colony in the fall. Extra honey in the hive with the bees is never wasted. If the bees do not use all of the honey prior to the major flow, what remains in the hive is a reserve for future needs.

Honey Ceilings Like many products, particularly since the close of the war, the price-distribution relationship of honey has become a serious problem not only to O.P.A. but to all producers, packers, and distributors. As such, it deserves the careful thought of all interested members of the industry.

Most honey producers are not willing to ship their honey at the bulk ceiling price of 12c a pound. The plight of the buyer or seller who follows the O.P.A. regulations is indeed not a pleasant one for almost no honey changes hands on this basis, nor is the position of the buyes or seller who pays or receives a black market price an enviable one.

The problem is further complicated by the price producers may receive if the honey is packed in small containers or sold to a cooperative buyer. With the tens of thousands of producers and buyers it seems to us that the problem of correcting the regulation so that it will be workable (assuming this to be possible) and then the administration of the order after it has been revised would be disproportionate with the good accomplished by such an order.

Even though we keep in mind the history of prices of honey following the first great World War and the resulting damaging deflation that followed the inflation it would seem that the suspension of present price ceilings on honey would be preferable to the confusion and demoralization of the market under the present regulation. The real increase in the price to the consumer will not be as large as it might appear on the surface. The resolution filed by the Michigan beekeepers as reported on page 290 of this issue is representative of the feeling prevailing in many sections of the country.

With the knowledge that many commodities of far greater influence on the general cost of living have been removed from price control it seems to us reasonable to expect that the honey price ceiling could also be suspended.

Nosema Increasing It is apparent from the evidence now in hand that the disease, Nosema, in its early stage when one can look right at it and not see it, is making inroads over the country. It is feared to be somewhat of a regional disease and further, worse some seasons than others. The serious part of the whole matter is that it acts on a "sight-unseen" basis and may be present but doing no more damage than to prevent the colony from producing a crop of honey, thus making the colony a constant liability as long as the disease is not evident. It is only in its advanced stage that the results of the malady can be seen.

It is noted that during severe winters—two colonies equally well prepared for winter with equal number of bees and stores— one dies and the other survives and produces a crop of honey. It is now possible to infect queens as well as bees with the feeding of a syrup inoculated with the virus of Nosema. Queens so fed invariably die while those in alternate colonies not so fed will not die.

It is dangerous to assume that Nosema is not serious—safer by far to regard it as a real menace because one cannot see it in its early stages.

We have a glimmering hope that the new drug that is giving such satisfactory results in the treatment

of American foulbrood will inhibit or clean out Nosema in a colony. Results as yet are not definite but if there is a scintilla of hope, we should continue to try it with the view of holding down this second great menace to the keeping of bees, namely, Nosema.

Pollen Traps in Extensive Use Pollen traps for catching pollen to supplement soybean flour have been in pretty general use. Some colonies are better pollen gatherers than others. Again, there are certain periods of the year when bees gather more pollen than at other times.

We wrote to Dr. C. L. Farrar about these variations and that our pollen trap was not furnishing pollen as we had expected. He writes:

Your report on pollen collecting was interesting even though disappointing. One of the uses of pollen traps is similar to that of the scale hive. namely, that it will give some indication of the pollen resources at various times of the year. We suspect you will find your greatest pollen collection from May through July, the clover and sweet clover blossoming period. We gather the bulk of our pollen from white and alsike clover and sweet clover. The pollen should be removed daily or at least every two or three days, depending somewhat on moisture conditions.

The best pollen collecting colonies sometimes will nearly fill a tray in one day. There seems to be a considerable difference between colonies in the amount of pollen collected. I also believe we showed you the differences in types of pollen gathered by colonies in the same yard when there is no single plant species producing an abundance of pollen.

We estimated the pollen reserves in one apiary the first week in August. The colonies averaged 830 square inches at that time. When the final estimates were made at the close of brood rearing the average reserve had dropped to 315 inches. There was considerable variation between colonies and the largest reserves were found in those that had two queens from the middle of May until the first of July. We usually find our reserves at the close of brood rearing ranging from zero to over a thousand square inches. Approximately three fourths will have less than 100 square inches which should be considered negligible, based upon optimum requirements.

The Curse of the Bee Industry May Yet be a Blessing to Mankind American foulbrood, long regarded as an unmitigated evil, may now serve a useful purpose as a source of a new antibiotic or "germ-killer." During the course of studies on foul brood by the Division of Bee Culture, Bureau of Entomology and Plant Quarantine, it was noted that larvae dead of this disease contained only pure cultures of **Bacillus larvae.** This unusual finding suggested that **B. larvae** produced an antibiotic which either killed or held back contaminating bacteria, since dead animal tissue is commonly attacked immediately by large numbers of putrefactive bacteria. This theory, when tested in the bacteriological laboratory, proved to be correct.

Bacteria of various types were inoculated into suitable culture media upon which they would grow. A scale was then laid on the surface of the medium. When the cultures were examined after an incubation period, the scales were surrounded by zones in which there was no bacterial growth, showing that an antibiotic had soaked out from the scale into the medium. Some of the bacteria shown to be susceptible were those causing boils, typhoid fever, malta fever, abortion in cattle, and human and bovine tuberculosis. All bacteria were not equally susceptible, while some, such as the bacillus causing tuberculosis of fowl, were totally resistant.

It should be understood that the above results were all made on laboratory media, and there is no guarantee whatsoever that the antibiotic will be effective in treating diseases of man or animals. Experiments are now in progress to study the possible use of the material in preventing or curing diseases in animals. The results will be published as soon as the work in completed.

Ladino Clover The August, 1945, issue of Canadian Bee Journal carries a short article by C. A. Jamieson, Bee Division, Ottawa, regarding a six acre field of Ladino white clover that was left for seed production by the Forage Division of the Ottawa Experimental Farm.

Honeybees worked the clover heavily during July. On July 16 a number of bees working Ladino were caught and nectar samples taken from their stomachs. The sugar concentration reading was 41.5 per cent. On July 26 more samples of nectar were secured and the sugar content averaged 48.7 per cent.

According to Mr. Jamieson, wild bees were not present in the Ladino

clover field, so honeybees were largely responsible for the seed set.

We would be glad to hear from beekeepers who have secured surplus honey from Ladino clover. It appears to have promise as a nectar plant.

Waste Land Makes Fall Honey Plants During the past few years, when farm labor has been scarce, the waste land growing up to goldenrod, aster, and other plants has increased considerably. This has been favorable for a fall flow where these plants secrete nectar.

On the other hand, in regions where clovers are ordinarily grown there has been a reduction in the clover acreage, also surplus honey secured, except possibly in areas where White Dutch clover grows abundantly in pastures and roadsides during wet seasons.

In the future, when labor and clover seeds are more plentiful and when legumes are again used to increase soil fertility, as they should be, there is likely to be an increase in the amount of white honey secured and possibly a decrease in the amount of fall honey harvested.

However, in large areas of the East goldenrod, aster, and other fall honey plants may continue to thrive.

Sweet Clover Seed Yield Increasing According to some late information gleaned from "The Southern Seedsman", sweet clover seed production this year, estimated at 761,100 bushels of thresher - run seed, is 14 per cent greater than the 1944 crop, but 14 per cent less than the ten-year average. If sweet clover seed production continues to increase it is obvious that both the farmer and the beekeeper will be benefitted. Sweet clover is considered one of the best, if not the best, legumes for increasing soil fertility and it is one of the most dependable sources of nectar.

Importance of Bee Meetings Beekeepers' meetings, county, state, national or international, can be made interesting and worthwhile. The program comittee should plan intelligently to have a well balanced program. There should be time between each talk for discussion. Occasionally some experienced beekeeper, not noted for his oratorical ability, feels the urge to comment on the topic being discussed and his remarks are needed to clarify some point perhaps not well understood by some in the audience. We have noted that occasionally such remarks from the floor may be more illuminating than those that come from the platform.

When a beekeeper gets to a place where he considers attending meetings a waste of time, he is probably in a rut without realizing it.

Due to the fact that there are thousands of beginner beekeepers, programs should be kept down to the level of beginners and the terminology used should be easily understood.

Winter Losses Lighter than Usual Reports received from over the country indicate a relatively small winter loss of bees. Colonies that were in good condition last fall are, on the whole, in good condition this spring. There were no prolonged cold spells during the past winter to prevent bees from having occasional cleansing winter flights.

Interruption in Early Brood Rearing Reduces Crop To obtain the maximum crop of surplus honey it is essential that there be no breaks in egg laying during the spring months prior to the beginning of the major flow.

A lack of honey or pollen in hives may cause queens to curtail their egg laying. Old queens permitted to remain in the hives during the spring months may be superseded with a consequent reduction in brood rearing. Unfavorable weather may interfere with normal brood rearing.

However, if hives contain an abundance of honey and pollen—or in the absence of natural pollen a pollen supplement or substitute—brood rearing should continue normally, provided it is not too cold.

During the month of May in the North, especially in clover regions there may be a short dearth of nectar for a week or ten days, in some regions, prior to the honey flow. This is a critical time for bees. Beekeepers should do all possible to keep brood rearing up to normal pitch. Populous colonies are required to store the maximum crop.

PHYSICAL AND CHEMICAL PROPERTIES OF EXTRACTED (LIQUID) HONEY OF AVERAGE COMPOSITION

The Average Chemical Composition of American Honey

[Based on a sample of 500 milliliters (1.057 pints) of "average" extracted honey, at 68° F. (20° C.). total weight 708 grams (25.0 oz. avoirdupois).]

The Principal Components *

		(Percent)	(Grams)
Water (natural moisture)		17.70	125
Levulose (d-froctose; fruit sugar)	40.50		287
Dextrose (d-glucose; grape sugar)	34.02		241
Sucrose (granulated, cane, or beet sugar	1.90		13
Total Sugars		76.42	541
Dextrin (including gum-like substances)		1.51	11
Ash (mineral substances: potash, soda, lime, magnesia, chlorides, sulphates, phosphates, silica, iron, manganese, copper)		0.18	1
	Total	95.81	678

Substances Occurring in Relatively Small Quantities

Acids (Formic, Acetic, Malic, Citric, Succinic, Animo Acids. Total free acid, calculated as Formic acid 0.08% ; 0.6 g); Pollen grains (particles of beeswax), Albuminoids (proteins); Maltose and less common sugars (sometimes Melezitose); Pigments (Carotin, Chlorophyll derivatives, Xanthophyll).

Substances usually present, but for which the quantitative determination is difficult: Flavors and Aromatic substances (Terpenes, Aldehydes, Esters); Higher Alcohols (Mannitol, Dulcitol); Tannins; Enzymes, including Invertase (converts sucrose to dextrose and levulose); Diastase (converts starch to maltose and possibly dextrose); Catalase (decomposes hydrogen peroxide); Inulase (converts inulin to levulose); the B-Vitamins and Vitamin C (Ascorbic acid), in small amounts.

		(Grams)
Total	4.19	30
Grand Total	100.00	708

Physical Properties of Average Honey

At a temperature of 68° Fahrenheit (20° C.), the **Specific Gravity** of average honey is1.4191 (based on weight, in air, of an equal volume of water, at the same temperature). This density corresponds to 80.66 degrees **Brix**, or 42.79 degrees Baume'. One pound occupies a volume of 10.84 fluid ounces (320.6 milliliters). One gallon weighs 11 pounds, 12.9 ounces. The **Caloric Value** of one pound of this honey is 1,488 Calories; of 100 grams, 328 Calories; of 100 milliliters (at 68° F.) 464 Calories. Average honey, of the composition shown, possesses a **Refractive Index**—determined under standard conditions,—of 1.4922 at 68° F., or 1.4910 at 77° F. (25° C.). It has a **Vapor-Pressure** at 68° F. corresponding to that in an atmosphere in which the Relative Humidity is approximately 60 percent, at 68° F.

Component Relationships

One pound (453.6 grams) of average honey measuring 10.84 fluid ounces at 68° F., contains 2.83 oz. (80.3 grams) of water, equivalent to 2.72 fluid ounces (80.5 milliliters) of water. It will be noted that the **volume** of the contained water amounts to 25.1 percent of the volume of honey, although the water content amounts to 17.7 percent on a **weight** basis. The difference is, of course, due to the relatively high specific gravity of the honey.

Although 1 gallon of average extracted honey contains slightly more than 9 pounds of total sugars, its **sweetening power** is equivalent to approximately 11 pounds, 4 ounces of granulated sugar, because of the 25 percent greater sweetening effect attributed to the honey sugars. On the basis of measured volumes, 1 volume (e. g. 1 cupful) of the honey has approximately the same sweetening power as 1.6 volumes (1.6 cupfuls, in the example) of granulated sugar. On the basis of weights, 1 pound of average honey containing nearly 18 percent of water, has about the same sweetening power as 0.95 pound (15¼ ounces) of granulated sugar.—U. S. Dept. of Agri., Production and Marketing Administration, Special Commodities Branch—Honey Section, March 15, 1946.

* Representing the average of the analyses of 92 samples of honey, by Dr. Charles A. Browne (U. S. Bureau of Chemistry Bulletin 110, now out of print)

Asked and Answered

Demareeing to Control Swarming

Question.—If I find queen cells in a colony and raise all the brood upstairs except one frame of unsealed, which is left downstairs with the queen, will this prevent swarming? If the queen cells in the brood upstairs are not destroyed will they be more apt to swarm than if they were destroyed? Supposing a queen hatched upstairs, could she get down through the queen excluder to the lower chamber where the old queen is?—Elliott D. MacLeod, Vermont.

Answer.—Raising most of the brood, except one frame, upstairs to prevent swarming, has been practiced for quite a number of years. This is called "Demareeing", having been originated by a beekeeper named Mr. Demaree almost 50 years ago. It is possible for the bees upstairs to rear a young queen, provided an opening is left for a virgin to leave the hive in order to mate. If all the queen cells are not destroyed in 9 or 10 days after the brood is raised to the super above, the queen is likely to be reared. If a queen excluder is placed under the super of brood upstairs, this queen will not be able to go down to the lower brood chamber. There should of course be a queen excluder directly above the lower chamber. If there is only one queen excluder, the two queens may get together and one may be stung and killed. If two queen excluders separate the two queens, this fighting is impossible.

Producing Comb Honey Over Double Brood Chambers

Question.—Last spring I decided to run one two story hive for comb honey. I was well satisfied with the results as this hive filled three comb honey supers besides one shallow super. I intended to try it again this year on as many hives as appear to be strong enough.

What I would like to know is, regardless of whether one is running for comb or extracted honey, should the queen be allowed the run of both hive bodies or should she be confined to one super?—D. O. Crawford, Ohio.

Answer.—Producing section comb honey over a two story brood chamber can be done provided the colony is very populous in bees and the season is favorable for comb honey production. There is no use in trying to produce comb honey unless the colony is strong and nectar is plentiful. During the latter part of the honey flow, the queen is likely to be driven down into the bottom brood chamber while the top chamber may be filled with honey. This is as it should be. It has been customary, however, to produce section comb honey over single brood chambers.

Getting Rid of Crooked Combs

Question.—Last summer when I hived two new swarms I inadvertently left out two frames in the center of each brood chamber. This space is now built solid with cross and crooked comb and naturally has most of the young bees.

The frames can be changed to another hive but this would leave the young bees which I do not wish to do. Also the queen may be in these combs. Will you tell me what to do?—Walter P. McFarland, N. Mex.

Answer.—Remove the two crooked combs from the center of the brood chamber and place these in the center of a super directly above the brood chamber, having a queen excluder under the super to prevent the queen from getting up into the super. You should make sure that the queen is in the lower chamber. You should, of course, place two good combs in the space formerly occupied by the crooked combs. As soon as the brood has emerged from the combs, raised into the super above the queen excluder, these crooked combs may be disposed of. You would of course save the wax as it is quite valuable these days.

Exchanging Weak with Strong Colony

Question.—Would you consider it safe to change locations of a weak and a strong colony in spring, even if there is a honey flow on, such as dandelion? Would the weak colony queen be killed?—Ernest A. Fortin, Quebec.

Answer.—It is considered good practice to exchange the positions of a weak and strong colony in the spring, especially during a honey flow from fruit bloom or dandelion. If the flow is not strong, it would be safer to cage the queen in the weak colony for a day or so at the time the exchange of hives is made. If you would put the queen in a cage with a little candy in the end so that the bees could release the queen in a short time, this would be the thing to do. This exchanging of weak and strong colonies does equalize the strength of colonies. The strong colony can stand losing a few bees, whereas the weak colony needs the additional bees.

Talks to Beekeepers

By M. J. Deyell

Swarming

I once knew a beekeeper who prided himself on having a large number of swarms issue from his hives. When I told him that I tried to prevent swarming, in order to keep all the bees in one hive to secure a larger crop of honey, he didn't understand what I was talking about.

While swarming may not be absolutely prevented, it can be controlled to a certain extent. Colonies wintered in single story hives in the North usually become very strong in bees during the fruit bloom and dandelion flow. When such colonies have brood in eight combs, it is time to put on a super of extracting combs without a queen excluder to provide comb space for brood rearing and incoming nectar. This relieves congestion and, as a rule, prevents swarming.

Colonies wintered in double brood chambers may also become very populous during the spring honey flow and it is necessary, as a rule, to give each colony a super of extracting combs to provide more comb space. This super may be given without the use of a queen excluder underneath so that the queen may occupy the combs of the super for brood rearing, if necessary, when the combs below become crowded. However, this makes more work later on when the queen is put down into the brood chamber, under the queen excluder to restrict her to the brood chamber during the honey flow.

Signs of Swarming

Some colonies may be intent on swarming regardless of control measures. It is well that a colony gives advance notice of swarming. The bees build queen cells along the lower edges of brood combs. These cells are easily recognized because they are different from other cells. Instead of being horizontal, as are worker and drone cells, they are built in a vertical position with the opening at the lower end. As said in some previous talk, they resemble peanut shells.

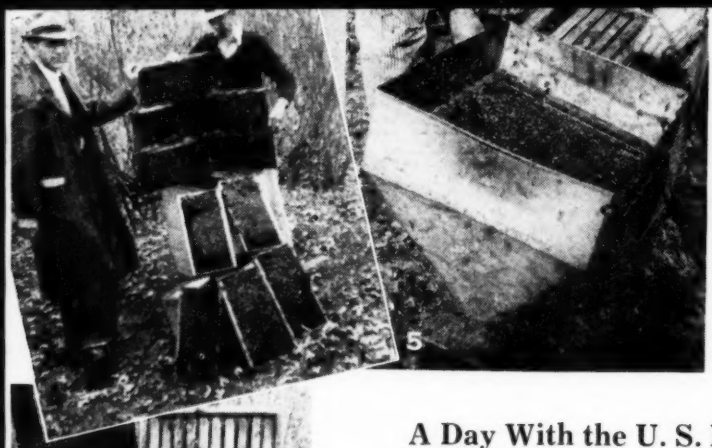
When the cells are first started, they resemble shallow cups. A little later on, as the sides of the cells are being built, each cell will be seen to contain an egg. A swarm will issue after the eggs have hatched and the larvae have developed, usually at the time the first cell is capped, which is about eight days after the egg is deposited in the cell.

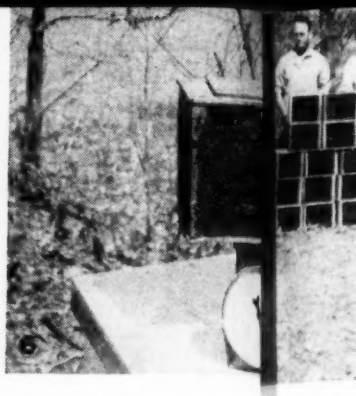
Sometimes during spring months, swarm cells may be started and then destroyed by the bees when the weather turns cool and thus nature takes care of the swarming situation.

If a Swarm Comes Out—What Then?

The old method of handling a swarm was to put it into a hive on a new stand. A much better method is to set the old, or parent, hive on the new stand a few feet away as soon as the swarm issues, giving the hive a quarter turn, thus facing its entrance away from its former position. Another hive containing either frames with full sheets of foundation, wired, or drawn combs, is placed on the old stand to receive the swarm. Frequently the swarm will cluster on the limb of a tree. Sometimes the swarm clusters on the top of a tall tree which causes the owner to do some tree climbing. The limb, if it is not too large, may be cut off and the bees shaken directly in front of the hive on the parent stand. If it is impossible to saw the limb off, the swarm may be shaken into a large two bushel basket with a wire wound around one of the handles so that after the bees are shaken into the basket, the handle may be wired to the limb of the tree temporarily until the swarm, including the bees in the air, have clustered on the inside of the basket. The basket hangs from the limb in

(Continued on page 309)





A Day With the U. S. Bee Culture Field Laboratory at Madison, Wisconsin

By E. R. Root

In the spring of 1944 we took a series of pictures looking into hives, April 30 and May 1, after many of the colonies had had two or three pounds of bees shaken out April 21, following which another two pounds of bees were taken out at the time of our visit.

It will be recalled that U. S. Bee Culture Laboratories are testing and selecting breeding stock, getting the queens from many different localities and different breeders. In order to avoid embarrassment to some breeders and to

1. Two-story colony showing bees at the top the last week in April. This speaks for itself. Remember that I was present and took the pictures as we saw them as the hives were opened up.

2. Three-story colony as wintered over, except the auger hole entrance has been shifted from the top to the middle chamber. Hive is factory-made with Hoffman frames.

3. Same colony broken down to show the cluster that covers all 20 combs in the top two chambers and extends into the bottom chamber. It was a rather cool day and before we could get a shot at them, the bees had crawled back under the combs, but all of those combs were well covered with bees with a considerable number of frames containing brood.

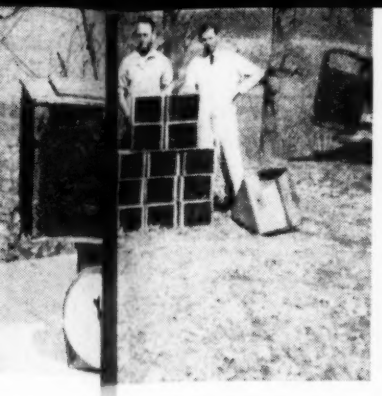
4. Overwintered colony from which package bees were shaken April 21. All colonies were wintered in 3 bodies. Some were reduced to 2 bodies as they were to be moved out to provide new locations for new package colonies.

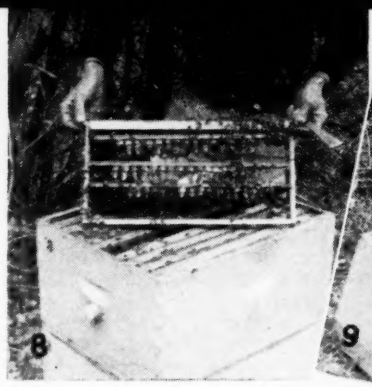
5. Package bees being shaken at Madison the last week in April. The government men use the regular standard funnel in the top of which is placed a queen excluder. The combs are shaken one by one on top of the excluder. The bees drop down and go into the cage below until the requisite number of pounds of bees comes to two or three pounds as the scale shows. This outfit is used by most of the large package men in the South. The purpose of it is to screen out the drones and to catch the queen if she is not discovered before on the frame. See cut. This type of funnel has the advantage of allowing the older bees to fly off and return to their hives.

6. Six pounds net bees shaken from a strong overwintered colony. Sufficient bees were left in the hive to care for 8 frames of brood that were present.

7. Thirteen packages shaken May 1 and used for stocking queen-mating nuclei. (Approximately 140 packages were shaken from overwintering colonies at the laboratory for experimental work between April 20 and May 1.) After shaking, there were enough bees left to care for the brood and build powerful colonies for the honey flow.

8. Grafted queen cells. These provided queens for artificial insemination studies by Mr. Roberts. At all the government yards young queens are raised by the artificial cell cup grafted with queen rearing grafting tools. In testing out the best strain of queens they not only





A Demonstration of How Dr. C. L. Farrar, Head of the Station, is Able to Double and Triple the Quantity of Bees through the Means of Selected Queen Stock and Feeding of Pollen Supplements

prevent others from taking advantage in an advertising way of their increased production of both bees and honey, the identity of all such stock is kept secret by the laboratory. Not even the senior editor of Gleanings was permitted to know who was among the breeders and what their relative production per colony was. The Department of Agriculture will establish a policy for the release of stock to the industry whenever the work has reached a stage that genetically superior stock can be assured.

Continued on page 301)

use the queens themselves, but breed from selected queens from the best breeders in the United States. This work, as well as that of artificial insemination, has been done by Mr. Roberts.

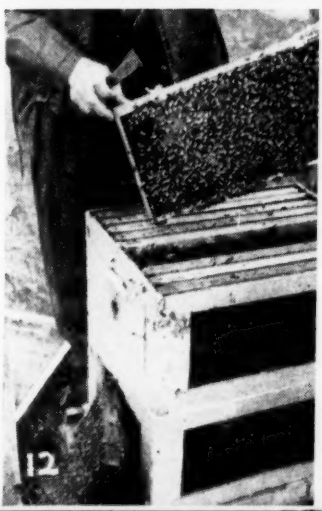
9. Checking newly established packages on the third day. Queens received by mail and added to Madison packages were introduced by the push-in method and released on the third day. Queens received with the commercial Southern packages were introduced by the spray and direct-release method.

10. This colony was wintered in 4 Modified Dadant shallow chambers and is being used for finishing queen cells. The top two shallow rims provided for feeding the colony while finishing the cells. Dr. Farrar and his associates are testing out square hives of Dadant shallow depth for extracting. The colonies that are raised on the principle of selected queen stock and on pollen supplements fed in the form of patties laid on top of the frames as explained will become enormously strong and when the hives are square they are not piled up so high . The weight of each of the supers (square in this case) will be about that of the 8-frame Langstroth hive. The manufacturers' objection to square hives is that the boards do not cut to advantage. The hive lumber used contains knots, and boards are cut up in such a way as to avoid the knots, leaving shorter pieces for the ends of the hives and the longer ones for the sides.

11. Same colony broken down showing large cluster extending through three sections and into the bottom one.

12. Frames of brood from a colony subjected to severe exposure in a screened hive. While such colonies are not expected to equal those wintered in first class equipment, the two that were wintered in this manner during 1943-44 would compare favorably with many commercial colonies. (The maximum and minimum monthly temperatures, together with the lowest temperature, is given here for the period November to April.)

	Mean monthly temp. Max.	Min.	Lowest temp.
Nov. 1943	39.3°	24.6°	14°
Dec.	33.6	15.2	-6
Jan. 1944	36.7	17.3	-8
Feb.	33.1	15.8	-2
Apr.	57.4	32.7	24



Just News

Members of the Michigan Beekeepers' Association from every section and district of Michigan spent the afternoon of Thursday, April 11, at a regularly called Association meeting in Saginaw discussing OPA price ceilings for honey. By unanimous vote it was decided to appeal to OPA to remove ceiling prices on bulk honey. It is agreeable to Michigan beekeepers to leave ceiling prices on retail pack honey to protect the consumer. It was the unanimous opinion of the members that both industrial users of honey and the honey packers would be able to obtain sufficient supplies of honey if ceiling prices are removed from bulk honey.—R. H. Kelty, Secretary Michigan Beekeepers' Association. (See editorial, page 282.)

On March 19 approximately 50 beekeepers met in our offices in Oklahoma City and organized the **Oklahoma State Beekeepers' Association.** There was much interest manifested in the meeting relative to the use of sulfa drugs, migratory beekeeping, present State laws relative to the movement of bees and the effect of DDT and other economic poisons on bees. A Board of Directors' meeting is to be held April 15, at which time the constitution and by-laws will be established. Mr. Glen Gibson, 2113 Cashion Place, Oklahoma City, was elected President, Mr. V. R. Oliphant, 1715 N. W. 33rd, Oklahoma City, Vice-President, and Clyde A. Bower, Dept. of Agr., Oklahoma City, was elected as Secretary-treasurer.—Clyde A. Bower, Sec.

The Winnebago County Beekeepers will hold an all day meeting on Sunday, May 12, at the home of B. E. Beach, 126 Clifford Ave., (Loves Park) Rockford, Ill., rain or shine. A very interesting program is being arranged. The speakers will be M. G. Dadant, of Dadant and Sons, H. J. Rahmlow, of Madison, Wis., and Carl Killion of Paris, Ill. Picnic lunch will be served at noon. Bring your own table service, sandwiches, and a dish to pass. Coffee, cream, honey, and meat will be furnished. (Honey baked ham, we hope.) Take Route 51 North out of Rockford 4.8 miles to the 6100 block on N. 2nd St. (Clifford Ave.) turn west three blocks.—R.E. Beach.

The **New Rochelle Beekeepers' Association** will hold its next regular monthly meeting at 2:30 P. M. on Sunday, May 19, 1946, at the home of Alfred B. Stoddard, 20 Whitfield Terrace, New Rochelle, N. Y. There will be a roll call of members and payment of dues for the year. A color film, "The Useful Honeybee" will be shown, after which a social hour will follow.—B. F. Miller, Publicity.

A short course in beekeeping will be held at the University Farm, St. Paul, Minnesota, May 9 to 11. Dr. E. F. Phillips, of Cornell University, and Dr. O. W. Park of Iowa State College, will be the main speakers.

Frank C. Pellett, field editor of American Bee Journal, a writer of books on bees and honey plants, has just come out with a revised edition of his book "A Living from Bees" which first appeared in 1943. The present edition contains two additional chapters "Need of Bees in Agriculture" and "Manipulation Simplified". The book explains how a living can be made from bees, also how maximum crops of honey may be secured. It is published by Orange Judd Publishing Co., New York City. The price is $2.25.

A new book, "Plants and Beekeeping", by F. N. Howes, Kew, Surrey, England, came off the press recently. The writer is a member of the scientific staff of Kew Gardens and has had a long experience in beekeeping. The book is written in a pleasant style and technical terms are largely avoided. It is published by Faber and Faber, Ltd., 24 Russell Square, London, W. C1, and the price is 12S 6d net.

The annual short course offered by Iowa State College to beekeepers is to be held at Ames on May 16 and 17. The guest speaker is to be Dr. E. J. Dyce of Cornell Uuiversity, Ithaca, New York. Special emphasis will be given during the pro-

gram of the first day to problems confronting beginners. Special emphasis will be given during the program of the second day to problems confronting commercial producers. A complete program will be available for distribution and may be obtained free upon request by writing to Extension Apiarist, Morrill Hall, Ames, Iowa.—F. B. Paddock, Extension Apiarist.

The Bronx County Beekeepers' Association will meet at the home of Mrs. Grace Bowen, 1336 Balcom Ave., Bronx, N. Y., on May 12, 1946, at 2:30 P. M. Bring your bee problems for discussion. Refreshments will be served at the close of the meeting.—Sam Roberts, Sec.

A four-week course in beekeeping, April 29-May 25, is offered by the Rutgers University College of Agriculture of New Jersey.—Robt. S. Filmer, Asst. Prof. of Entomology.

Howard Myers who was in the South during the orange flow wrote on March 26 "Foggy and so much orange odor in the air that the bees are carrying the fog in for nectar". Isn't that just like Howard? He tells these tall stories so often that he believes them.

SULFATHIAZOLE TREATMENT OF FOULBROOD COLONIES

The following is a circular letter sent by R. H. Kelty, Horticultural Department, Michigan State College, and speaks for itself:

Sulfathiazole may be fed to bees experimentally by dissolving one half (½) gram, or seven and one half (7½) grains, of soluble sodium thiazole in water and adding this amount of sulfathiazole solution to one (1) gallon of heavy sugar syrup, made of one half (½) sugar and one half (½) boiling water, or better, two(2) parts sugar to one (1) part water. Stir the sulfa into the sugar syrup repeatedly because it has a tendency to settle out.

It has not been proven conclusively that the ssulfa treatment eradicates the disease, American foulbrood, in a colony of bees. Furthermore, the preliminary experimentation down here in 1945 indicates that different colonies react differently to the sulfa treatment. Strong colonies mildly infected with foulbrood, fed at ten (10) day intervals commencing in early spring until a total of three (3) to eight (8) gallons of of sulfa treated syrup, may apparently clean up the disease so that no evidence of foulbrood is discernable. When the feeding of sulfa syrup is discontinued for a period, the disease may reappear in some colonies later in the season. Other colonies, particularly strong ones mildly infected with disease, may continue to appear to be clean the rest of the season.

For the protection of the beekeeper, the following suggestions are earnestly recommended:

First—do not try to treat weak colonies heavily infected with foulbrood. Destroy them and eradicate the disease as has always been recommended

Second—if, after treatment as previously outlined, colonies continue to show the presence of foulbrood, destroy them promptly.

Third—colonies which apparently clean up the disease should be clearly marked so that the colonies and all equipment may be kept completely isolated from clean colonies and clean equipment for a period of from three (3) to five (5) years. This will give ample opportunity for the beekeeper to detect the reappearance of disease in the colony without the danger of contaminating other clean equipment and clean colonies. Equipment from sulfa treated colonies should be extracted separately and the extracting equipment should be thoroughly sterilized before again using it for clean equipment because it is possible that the sulfa treatment merely covers up the disease instead of completely eradicating it.

Fourth—under no circumstances should the beekeeper attempt to winter over a sulfa treated colony which shows the least symptoms of foulbrood. If there is a single scale in the colony at the end of the broodering period in September, that colony should be destroyed and the equipment thoroughly sterilized.

Fifth—sulfathiazole is listed by state and federal drug authorities as a "Dangerous Drug" and, therefore, may be dispensed legally by legitimate pharmacists only and is obtainable legally only by prescription. Since bees are animals, your veterinarian could prescribe its use for treating bees. The soluble form is preferred.

Bob Davis, son-in-law of Howard Myers, working nucleus with average amount of brood near Sebring, Florida. (Picture taken January 28, 1946.)

Who's Who in Apiculture

To supply a handy reference of the names and addresses of state and provincial apiary inspectors, secretaries of beekeepers' associations, extension workers in beekeeping, and other information often needed by our readers, we have corrected our "Who's Who in Apiculture", as of April 1, 1946.

Prov. or State	Beekeeping Taught in Agr. College	Bees on Admitted Combs	Net Wt. Law	Ex. Cb.	Inspector State or Province	Secretary State Association
Ala.	Yes	No	Yes	Yes	Chas. North, Montgomery.	F. E. Guyton, Auburn.
Alta.	No	No	Yes	No	W. G. leMaistre, Edmonton.	W. G. leMaistre, Edmonton.
Ariz.	No	Cert.	Yes	Yes	Paul R. Grant, Phoenix.	C. L. Benson, Phoenix.
Ark.	No	Cert.	Yes	Yes	A. Gay, Little Rock.	I. E. Nantze, No. Lit. Rock.
B. C.	No	No	Yes		W. H. Trumbull, Vernon.	W. H. Trumbull, Vernon.
Calif.	Yes		Yes	Yes	H. M. Krebs, Sacramento.	T. S. Davis, Sacramento.
Colo.	No	Cert.	Yes	Yes	F. Herbert Gates, Denver.	F. Herbert Gates, Denver.
Conn.	Yes	Cert.	Yes	Yes	R. B. Friend, New Haven.	Chas. Rost, Meriden.
Dela.	No	Yes	No	No	L. A. Stearns, Newark.	L. A. Stearns, Newark.
Fla.	No	Cert.	Yes	Yes	R. E. Foster, Gainesville.	D. R. Allgood, Tampa.
Ga.	Yes	Cert.	Yes	Yes	A. V. Dowling, Valdosta.	Robert Dewar, Valdosta.
Idaho	No	No	Yes	No	C. F. Feeler, Nampa.	Malcolm Stewart, Jerome.
Ills.	Yes	Permit	Yes	Yes	Carl E. Killion, Paris.	Hoyt Taylor, Pleasant Pl.
Ind.		Cert.	Yes	Yes	J. E. Starkey, Indianap'l's.	Jas. E. Starkey, Indianap.
Iowa.	Yes	Cert.	Yes	Yes	F. B. Paddock, Ames.	F. B. Paddock, Ames.
Kans.	Yes	Cert.	No	No	R. F. Parker, Manhattan.	W. M. Cline, Fredonia.
Ky.	Yes	Cert.	Yes	Yes	W. A. Price, Lexington.	Arthur Lose, Anchorage.
La.	Yes	Permit	Yes	Yes	W. E. Anderson, B. Rouge.	Warren Whitcomb, Bat. Rg.
Me.	No	No	Yes	Yes	Paul T. Caine, Winthrop.	Chas. O. Dirks, Orono.
Man.	Yes	Cert.	Yes	No	E. C. Martin, Winnipeg.	E. C. Martin, Winnipeg.
Md.	Yes	Cert.	Yes	Yes	Geo. Abrams, College Park.	Geo. Abrams, College, Pk.
Mass.	Yes	Cert.	Yes	Yes	B. N. Gates, Worcester.	E. F. Trainer, Worcester.
Mich.	Yes	No	Yes	Yes	D. P. Barrett, Lansing.	R. H. Kelty, E. Lansing.
Minn.	Yes		Yes	Yes	T. L. Aamodt, St. Paul.	C. D. Floyd, St. Paul.
Miss.	Yes	Permit	Yes	Yes	Clay Lyle, State College.	Clay Lyle, State College.
Mo.	Yes	Yes	Yes	Yes	State Entomologist.	Geo. D. Jones, Columbia.
Mont.	No	Permit	Yes	Yes		Mrs. O. R. Burdett, Laurel.
Nebr.		Cert.	Yes	Yes	L. M. Gates, Lincoln.	Mrs. Henry Puppe, Neb. C.
Nev.	No		Yes	Yes	George W. Schweis, Reno.	No Association.
N. B.	No	No	Yes	No	E. F. Moore, Fredericton.	Ray Parent, Fredericton.
N. H.	Yes	No	Yes	Yes		Henry Holt, Manchester.
N. J.	Yes	Cert.	Yes	Yes	R. L. Holcombe, Lambert.	E. G. Carr, Pennington.
N. M.	No		No	No	Ray Parks, Lamiter.	
N. Y.		Cert.	Yes	No	A. C. Gould, Albany.	E. T. Cary, N. Y.
N. C.	Yes	Cert.	Yes	No	D. L. Wray, Raleigh.	F. B. Meacham, Raleigh.
N. D.	Yes	Cert.	Yes	No	J. A. Munro, Fargo.	Arvid Benson, Moorhead.
N. S.	Yes	No	No	No	H. G. Payne, Troro.	E. D. Craig, Kentville.
Ohio.	Yes	Cert.	Yes	Yes	C. A. Reese, Columbus.	W. E. Dunham, Columbus.
Okla.	Yes	Cert.	Yes	Yes	Clyde A. Bower, Ok. City.	Clyde A. Bower, Ok. City.
Ontario.	Yes	Permit	Yes	No	G. F. Townsend, Guelph.	G. F. Townsend, Guelph.
Oregon.	Yes	Cert.	Yes	Yes	A. Burr Black, Salem.	John D. Burt, Newberg.
Penn.	Yes	Cert.	Yes	Yes	Harry B. Kirk, Harrisburg.	H. M. Snavely, Quakert'n.
Quebec.	Yes	No	Yes	No	J. R. Methot, Quebec City.	J. A. Prud'homme, St. Isi.
R. I.	No	Cert.	Yes	Yes	H. A. Pike, Conimicut.	Bentley McIntosh, Prov.
Sask.	No	No	Yes	No	R. M. Pugh, Ft. Qu'Appelle.	R. M. Pugh, Ft. Qu'Appelle.
S. C.	Yes	Cert.	Yes	Yes	J. A. Berley, Clemson.	W. K. Moore, Sandy, Spr.
S. D.			Yes	Yes	A. N. Pastian, Brandon.	
Tenn.	Yes	Cert.	Yes	Yes	John Amos, Nashville.	John Amos, Nashville.
Texas.	Yes	Cert.	Yes	Yes	F. L. Thomas, College, Sta.	
Utah.	No	Cert.	Yes	Yes	B. C. Taylor, St. Lake City.	Royal Atwood, Bountiful.
Vt.	No	Yes	Yes	Yes	Podger Jones, Johnson.	Charles Mraz, Middlebury.
Va.		Cert.	Yes	Yes	H. W. Weatherford, V. Hill.	H. W. Weatherford, V. Hill.
Wash.	Yes	No	Yes	Yes	Geo. N. Paige, Olympia.	Howard Graff, Bow.
W. Va.	No	Cert.	Yes	Yes		H. J. Rahmlow, Madison.
Wisc.	Yes	Permit	Yes	No	James Gwin, Madison.	Herbert B. Addleman, Dou.
Wyo.	No	Cert.	Yes	Yes	D. Thomas Snipes, Powell.	

United States—Investigation and Demonstration in Beekeeping, James I. Hambleton, Bureau of Entomology and Plant Quarantine, Beltsville, Md.; Southern States Field Laboratory, W. W. Whitcomb, Baton Rouge, La.; Pacific Coast Laboratory, Geo. H. Vansell, Davis, Calif.; Inter-Mountain Laboratory, A. P. Sturtevant, Laramie, Wyo.; Bee Field Culture Station, C. L. Farrar, Madison, Wisconsin; and University of Arizona, Tuscon, Ariz.

Dominion of Canada—Investigation and Demonstration in Bee Culture, C. B. Gooderham, Dominion Apiarist, Experiment Farm, Ottawa, Canada.

Apiary Inspectors of America—Chairman, Chas. A. Reese, Columbus, Ohio.

National Federation of Beekeepers' Associations—President, John Holzberlein, Jr., Grand Valley, Colo.; Secretary-treasurer, Glenn O. Jones, Atlantic, Iowa.

Bee Industries Association—Chairman, Alan Root, Medina, Ohio; Secretary, Roy Grout, Hamilton, Illinois.

American Beekeeping Council—Chairman, Woodrow Miller, Colton, Calif.; Secretary, Roy A. Grout, Hamilton, Ills.

American Honey Institute News Notes

Commercial State Bank Building, Madison 3, Wisconsin
Harriett M. Grace, Director

The calendar for 1946 was a most popular piece of publicity for Honey. In order not to disappoint any one this year, we are taking orders for the 1947 calendars right now, with delivery September 1.

On orders for 200 or more, you may have your name and address with the words "compliments of" or another appropriate imprinting. The calendar will cost $1.00 per hundred, postpaid. It isn't necessary to send the money for the calendars at this time. You will be notified when they are ready. We do want your orders now in order to have enough paper stock on hand for them.

The following is an extract from **The Michigan Farmer:**

"A letter from Elmer Carroll, editor of the Beekeepers' Magazine, brings a folder that reminds the reader of Honey for Breakfast Week starting Easter Sunday, and National Honey Week, from October 27 to November 2. On the front is the slogan, 'Start the Day the Sweet Way with Honey.' Inside is a 12-months calendar with the days of the two events in color. The back is given over to a brief and to-the-point selling message on Honey. These Honey folks are really smart, getting the public spotlight twice a year."

One of the nation's best known firms says, "It is not enough to practice good conduct. To succeed, an organization must be recognized as having these qualities."

National Child Health Week is celebrated April 27 through May 4. The **Institute** will feature recipes and menus suitable for children. Food that is good for children is good for all members of the family.

The following weeks give excellent opportunities to feature Honey:

Baby Week . . . . . First week of May
Restaurant Week -First week of May
Golf Week . . . . Second week ofMay (energy for the game)
Raisin Week . . Second week of May

June is Milk Month; July, Iced Coffee and Iced Tea Weeks.

We hear a great deal about public relations these days. The Director of the **Institute** has had the privilege of serving on the Public Relations Committee of the National Home Economics in Business Association this year.

Exclusive eating places throughout the country are using "Old Favorite Honey Recipes."

It is interesting to note that many of the first food pages on emergency flour featured a Honey recipe.

Because of the new flour on the market, the **Institute** will withhold the printing of the booklet, "Honey Cakes" until later.

Serve honey in some way every day. It's good for every member of the family.

May we remind you again to place your order for leaflets, calendars, and books now?

Southern States Beekeepers' Federation—President, G. G. Puett, Hahira, Ga.
American Honey Institute—Chairman, Lewis W. Parks, Madison, Wisconsin; Director, Mrs. Harriet M. Grace, Madison, Wisconsin.
Canadian Beekeepers' Council—Secretary, R. M. Pugh, Fort Qu'Appelle, Sask.
Texas Apicultural Research Laboratory—A. H. Alex, San Antonio, Texas.
Extension Specialists in Beekeeping—Alabama, W. A. Ruffin, Auburn; Alberta, W. G. le Maistre, Edmonton; Arkansas, Victor C. Thompson, Hope; British Columbia, W. H. Turnbull, Vernon; California, J. E. Eckert, Davis; Connecticut, Elbra Baker, Brooklyn; Deleware, L. A. Stearns, Newark; Georgia, J. F. Reinhardt, Tifton; Illinois, V. G. Milum, Champaign; Iowa, F. B. Paddock, Ames, and Howard Shipton, Sioux City; Louisiana, J. B. Garrett, Baton Rouge; Manitoba, A. V. Mitchener, Winnipeg; Michigan, R. H. Kelty, East Lansing; Minnesota, Bureau of Plant Industry, St. Paul; Mississippi,Clay Lyle (part time), State College; Missouri, Leonard Haseman, Columbia; New Hampshire, J. R. Hepler, Durham; New York, E. J. Dyce, Ithaca; Nova Scotia, H. G. Payne, Kentville; Ohio, W. E. Dunham, Columbus; Oklahoma, C. F. Stiles, Stillwater; Ontario, G. F. Townsend, Guelph; Oregon, H. A. Scullen, Corvallis; Pennsylvania, P. G. Craddock, State College; South Carolina, E. S. Prevost, Clemson; Tennessee, George Herrington, Knoxville; Virginia, Henry W. Weatherford (part time), Vernon Hill; Washington, R. L. Webster, Pullman; Wisconsin, H. J. Rahmlow, Madison. (Where we did not hear from a state, we repeated last year's listing.)

HOMEMAKING CHATTERBOX

By Mrs. Harriett M. Grace, Director
American Honey Institute, Madison 3, Wisconsin

The 12th of May is Mother's Day, and an excellent time for her to play the lady of leisure and let the rest of the family wait on her. How about having Dad and the children get the dinner? Most men like to putter around in a kitchen once in a while, whether they'll admit it or not, and it is loads of fun for the youngsters. It is quite possible to serve a very attractive and delicious meal without the culinary talents of Escoffier. Here is a menu that should eliminate any stumbling blocks and satisfy everyone's appetite. Better let Dad handle all the knife work to spare the first aid supplies.

Iced Tomato Juice
Baked Hamburger Patties
on Onion Slices
Baked Potatoes
Head Lettuce Salad with
Honey-Lemon Dressing
Bread and Honey Butter
Tapioca Cream
with Fruit
Milk Coffee

* * * * *

Tapioca Cream

⅓ cup quick cooking tapioca or substitute, 2 eggs, 4 cups scalded milk, ⅓ cup honey, 1 teaspoon vanilla extract, ¼ teaspoon salt.

Combine tapioca, honey, salt and egg yolks in top of double boiler. Add milk slowly and mix thoroughly. Cook until tapioca is transparent, stirring often. Remove from heat and fold into stiffly beaten egg whites. Add the vanilla. Serve cold over honey sweetened fresh berries or other fresh fruit in season.

* * * * *

It is often asked which is the best way to serve oranges for the breakfast fruit. Generally speaking, that is a matter of individual preference, but from a nutritional standpoint, those served in segments will provide ½ to ¾ more vitamin C than the strained juice from those same oranges.

* * * * *

Here is a tip in the dishwashing and laundry department. An advance rinsing in clear, cold water will save time and trouble in washing glassware, , silverware, and dishes which have milk on them. This works equally well for table linen on which milk has been spilled.

* * * * *

The use of coasters under drinking glasses will save many a marred table top and stained table cloth. If you have cork coasters, coat the inside where the glass rests with colorless nail polish to keep them from becoming water soaked. This same treatment will keep metal ones from tarnishing and discoloring also.

* * * * *

As one widely published cartoon put it, the post-war world in household equipment has been mighty disappointing, but the manufacturers promise us great things in the post-strike world. It seems that among these is a bagless vacuum cleaner with a large motor which is completely separate from the cleaning unit. It can be used to launder rags, upholstery, for mothproofing and so forth. The dirt is collected in a reservoir which can be emptied as easily as a dust-pan.

* * * * *

Warm weather means white gloves, which in turn means a small laundry task after every wearing. To keep the gloves in trim shape, use an old curling iron for stretching the fingers before they dry.

Illness of Mrs. Deyell Fatal

Mrs. May Gates Deyell, wife of Mossom J. Deyell, editor of Gleanings in Bee Culture, passed away on April 8, at Medina Community Hospital following a long illness.

Mrs. Deyell, beloved by all, was a native of Stormstown, Pennsylvania, and had lived in Medina since 1904. She was always active in community affairs and a faithful worker in the Congregational church. She was a past treasurer of the Ladies' Benevolent Society and a charter member of the Utilian Club.

Buy and Sell Here

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 10 cts. per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceding.

CLASSIFIED ADS

HONEY FOR SALE

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Manufacturers of Bee Supplies, Onsted, Mich.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C.O.D. terms except where the buyer has thoroughly established his credit with the seller.

WE PAY CASH for extracted clover honey. Fairfield Honey Company, Millersport, Ohio.

WANTED—All types clover and fall honey, 1945 crop. Cloverdale Apiaries, Fredonia, N. Y.

WANTED—White and amber honey, any amount. D. F. Treap, 316 Keenan Ave., Cuyahoga Falls, Ohio.

WANTED—EXTRACTED HONEY—Clover or light amber. C. H. Denny, 483 Moody Street, Akron, Ohio.

HONEY & BEESWAX—Highest prices paid. Mail samples. Advise quantity. BRYANT & COOKINHAM, LOS ANGELES, CALIFORNIA.

HIGHEST cash return made the day we receive your beeswax. Write for shipping tags and quotations. Walter T. Kelley Co., Paducah, Kentucky.

CASH FOR YOUR HONEY—Extracted or comb. Regular trade, send sample. 60-lb. cans furnished, if desired. W. R. Moomaw, Stone Creek, Ohio.

HONEY WANTED—All grades. Carloads or .less Also Beeswax. Pay Top Prices. H. & S. Honey & Wax Co., Inc., 265-267 Greenwich St., New York, 7, N. Y.

HONEY WANTED—All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 1360 Produce St., Los Angeles, Calif.

ALL GRADES OF HONEY needed badly. Our truck will pick up at your door and pay top cash prices. ALEXANDER CO., 319 Reynolds, Toledo, Ohio.

WANTED—Honey, extracted or comb. Mail sample, quote price. SEIFERT & MANN, 106 South Water Market, Chicago, since 1889.

WANTED CLOVER HONEY, any amount, comb or strained package or unpackaged. Will pay top price. Lose Bros., 206 E. Jefferson St., Louisville 2, Ky.

WANTED—light extracted honey, clover preferred, in 60's. J. Jones, 115 West 82nd St., New York 24, N. Y.

FLORIDA AND GEORGIA BEEKEEPERS—I want your gallberry honey. Containers furnished. Ceiling price paid. John M. Howell, General Delivery, Waycross, Georgia.

WE DARE YOU to sell us some honey. Cause we punish you with the highest possible price. Oh, you don't remember the name? Just ask the missus. She remembers your Honeymoon. The Honeymoon Products Co., 39 E. Henry St., River Rouge 18, Mich.

FOR SALE

QUEENBEE PAINTING OUTFITS, $1.00; colony records, 10-15c postpaid. Southwick Apiaries, Waban Mass.

BEEKEEPER'S HOIST — $25.00 f.o.b. Frt. prepaid in U.S.A. on two hoists to same address. Turner Mfg. Co., Corning, Iowa.

FOR SALE—SUPERS for 10-frame hives for 4 x 5 sections; also 4 x5 sections; comb foundation, etc. No disease. W. D. Achord, 1102 No. Cory St., Findlay, Ohio.

SAVE MONEY by letting us work your wax into wired regular comb foundation. Large catalog describes everything. You pay only wholesale factory prices as we have no agents. Walter T. Kelley Co., Paducah, Kentucky.

WRITE FOR CATALOG. Quality Bee supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Michigan.

FOR SALE—Four frame Root power honey extractor, Peterson capping melter, steam uncapping knife, large honey tank. $50 for outfit. F. E. Schriver, Grafton, O.

WRITE FOR LOW CASH price glass jars and 5-lb. tin pails. Complete stock. Prompt shipment. Roscoe F. Wixson, Dundee, N. Y.

WE CARRY a complete stock of bee supplies and honey containers. Write for our price list. Prairie View Honey Co., 12303 12th St., Detroit 6, Mich.

FEEDING SYRUP to bees made sure, fast, and easy by new and very inexpensive device. Write Ed Trimble, Warroad, Minn.

NEW ROOT POWER UNCAPPING MACHINE with or without motor. C. E. Cheeley, Columbus, Montana.

NEW AND USED SUPERS for 4 x 5 plain sections, fence separators. Used supers for 4¼ sections, plain separators. Just a few left. Bargain priced. Albert Hann, Glen Gardner, N. J.

40 USED KELLY TYPE BABY MATING BOXES, complete, painted, $1.00 each. L. E. Smith, Hollow Rock, Tennessee.

Honey and Beeswax Wanted

We are ALWAYS in the market, paying best market prices.

Send for our 1946 price list on bee supplies.

Doing business since 1858.

The Fred W. Muth Co.
229 Walnut St., Cincinnati 2, Ohio

WANTED: Extracted Honey All Kinds

One can or a carload—what have you? Mail your offerings and samples to us. Prompt action—Cash on delivery.

JEWETT & SHERMAN COMPANY
Lisbon Rd. & Evins, Cleveland 4, O.
1204 W. 12th St., Kansas City 7, Mo.

Soy Flour & Pollen Traps

We are distributors of Staley's Lo-Fat, High Protein expeller processed soy flour for beekeepers. We offer the finest quality in our soy flour and pollen traps.

KILLION & SONS APIARIES
Paris, Illinois

HONEY WANTED

All Grades - Any Quantity
Bryant & Cookinham
Los Angeles Honey Co.
2425 Hunter Street
Los Angeles 21, California

Use the **Handy Hive Hoist** to work your bees

Takes the back work out of bee work

Pat. applied for
Write for descriptive folder.

Tuttle Mfg. Co.
Baraboo, Wisc.

200 COLONIES, deep shallow and comb supers. All or part. 1½ ton truck. Wm. March, R. D. 3, Mantua, Ohio.

FOR SALE OR TRADE for bees, 300 bee shipping cages and about 150 2-frame nuclei shipping boxes. All like new. Vernon Homer, R. 4, Menomonie, Wis.

FOR SALE—400 10-fr. 2-story colonies of bees (Italian). All new equipment 1944 and 1945. Hive bodies, tops, and bottoms, full sheets foundation, $15.00 each at yard as they stand, yard run. Guaranteed disease free. W. A. Wiley (Jeweler), 65 Commerce St., West Point, Miss.

FOR SALE—JOHN CONNER'S Library of Bee Books and Magazines. Many old and rare editions. List can be secured by writing to Manuel Calvache, 651 N. Mount Ave., North Caldwell, N. J.

INSTANT SEVEN AND NINE FRAME SPACERS. Fast — accurate — indispensable. Fat combs — easy uncapping. Set does all supers, $1.50 postpaid. SPECIFY SIZE. George Leys, 48 Drake Ave., New Rochelle, New York.

FOR SALE—A 9 room city home, modern, 2 stories, 2604 No. Main St., Findlay, Ohio. Bee location, etc. An unusually good location to sell honey at retail price. Trade already established. It requires a few thousand cash to deal. See W. D. Achord, 1102 No. Cory St., Findlay, Ohio.

FOR SALE— Quality medium brood foundation at .70 per pound. Fred Peterson, Alden, Iowa.

OFFERING new and used prewar 10 frame equipment. 100 lbs. Dadant wired foundation. 1000 Lewis Slotted Bottom Brood Frames. Wendt Poultry Service, Hutchinson, Minn.

BEES AND QUEENS FOR SALE

Gleanings cannot guarantee that all bees advertised for sale in its classified columns are free from disease. We use all possible care in accepting advertisements, but we cannot be held responsible in case disease appears among bees sold. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.

GOOD ITALIAN QUEENS, $1.00 each. D. W. HOWELL, SHELLMAN, GEORGIA.

PACKAGE BEES with young laying Caucasian queen; 2 lb. package with queen, $3.80; 3 lb. package with queen, $4.80. Miller & Evans, Three Rivers, Texas, Rt. 1.

ITALIAN queens selected for winter hardiness, production, non-swarming, and bred for resistance to A.F.B. Ready June 15, $1.25. R. E. Newell & Son, Medway, Mass. Air mail extra.

CAUCASIAN PACKAGE BEES for April and May. 2 lb. pkg., $4.00; 3 lb. pkg., $5.00. Prompt shipment. Lewis & Tillery Bee Co., Greenville, Ala.

FOR SALE — Standard three-pound packages certified Italians, $4.40 net F.O.B. after May 15th. A. V. Dowling, Valdosta, Georgia.

Queenless Packages, 2 or 3 pounds. one dollar per lb., with queen, one dollar extra. shipment from Nashville last of May and June. N. S. Gladish, Nashville 5, Tenn.

ITALIAN QUEENS for May and June delivery at $1.25 each. No more orders for packages accepted. John M. Brose, Capitola, California.

ITALIAN QUEENS, $1.00 air mail service from Albany. Pinkie & Buck Apiaries, Box 383, Albany, Georgia.

50 HIVES OF BEES in good condition. Bees not inspected this year. Louis Ginstie, 2 Acacia Dr., Dayton, Ohio.

THREE BAND ITALIAN QUEENS bred from high producing colonies, none better. Prices through May, $1.00; June first and balance of season, 75c each. W. A. Fletcher, Garland, Texas.

EARLY PACKAGE BEES. Prompt shipment begins May 5. Two pound package and queen, $6.50 postpaid; Three pound package and queen, $5.00 postpaid. Choice Italian queen, $1.25. Safe arrival guaranteed. Birdie M. Hartle, Reynoldsville, Penna.

ITALIAN QUEENS good as the best in every respect. Prompt service, $1.10 each; $12.00 per dozen. READY JUNE 3. The Victor Apiaries, 46916 Michigan Ave., R. F. D. Belleville, Michigan.

GOLDEN ITALIAN QUEENS, finest quality, select, $1.25 each up to 50; over 50, $1.10 each. Health certificate with every order. Carolina Bee Farm, W. O. Curtis, Mgr., Graham, N. C.

FOR SALE—Complete Apiary, 7 room home, 9 acres, 170 colonies, plenty equipment, in village. Certificate of inspection furnished. Box 12, Custer, Michigan.

ITALIAN QUEENS, one dollar each. S. J. Head, Crossett, Arkansas.

REAL PETS — Brown's non-stinging, non-swarming bees. Good producers. This season's queen price, $2.00 each. Brown's Apiary, Cape May Court House, N. J.

FOR SALE—50 colonies of Italian bees, 10 frame metal cover hives, two story, painted, wired combs. Inspection at time of sale, $15.00 each. Anton Jux, Purchase, Westchester County, New York.

FOR SALE—90 colonies of bees. Certificate of inspection furnished. Roy Ferguson, Dunbar, Nebraska.

BREWER'S LINE-BRED CAUCASIAN QUEENS— Breeding stock selected from 1000 field tested colonies for honey production and gentleness. Open dates from June 15th. $1.00 each. AIRMAIL, postpaid. Brewer Brothers Apiaries, 3217 Hawthorne Road, Tampa 6, Florida.

FOR SALE—A few days before honey crop! Complete 200 colony outfit, 10-frame, supers, excluders, etc., good and ready for 1946 crop! Certificate of inspection furnished C. Paradix, 135 St. Jean-Ville St. Joseph, Drummondville, Ont., Canada.

FOR SALE—All or any part of 400 colonies equipped for extracted honey production. Hives are 8-frame, deeper and longer than standard, in good condition throughout. Inspection certificate furnished. Bees must be moved from locations by June 1. Good reason for selling. B. B. Coggshall & Son, Groton, N. Y.

BEES WANTED

WANTED—100 colonies bees and equipment. Knierim, 701 Sheridan Avenue, Columbus, Ohio.

WANTED—Colonies of bees in Michigan. Frank D. Chamberlain, Caro, Mich.

WANTED—Colonies bees also package bees. Quote price. Thomas McDermott, 123 No. 11th Street, Newark 7, N. Jer.

WHITTLE'S

PACKAGE BEES AND QUEENS

LEATHER COLORED ITALIANS

are Guaranteed to Please!

Booking Orders Now For 1946

We have a number of open shipping dates. Do not delay, book now and be safe!

Prices to May 20th:

	Queens	2-lb.	3-lb.	4-lb.	5-lb.
1-24	$1.25	$4.00	$5.10	$6.20	$7.30
25-99	1.15	3.75	4.80	5.85	6.90
100-up	1.05	3.50	4.50	5.50	6.50

Geo. E. Whittle

Star Route, West

GREENVILLE, ALA.

PACKAGE BEES

Hardy leather colored Italians.

Fast conscientious service.

2-lb. with queen, $4.00

3-lb. with queen, $5.00

25c per package extra for small orders.

BOOK NOW FOR '46!

EUGENE WALKER

397 Oregon St. Gridley, Calif.

NOW BOOKING
1946 PACKAGES

2-lb. package with queen $3.75
3-lb. package with queen 4.75
Queenless package ..... deduct $1.00
"Dixie's Best" (Italians)

TANNER BEE CO.
Laurel, Miss.

Root Quality
Bee Supplies
For Sale
Send your order to
W. H. Starrett
121 N. Alabama Street
Indianapolis 4, Indiana

NORMAN'S
BRIGHT ITALIAN BEES AND QUEENS

For 26 years we have been breeding the Italian stock. We guarantee pure mating of queens, safe arrival on queens and package bees. Health certificate furnished.

All package bees F. O. B. Express.

2 lb. pkg. bees with queen	$3.75
3 lb. pkg. bees with queen	4.75
4 lb. pkg. bees with queen	5.75
Young laying queens	0.80
Tested queen	1.60

Norman Bee Co., Ramer, Ala.

HOLLOPETER'S ITALIAN QUEENS

Beginnng around May 15th this strain of Northern-bred queens will be ready. Untested, $1.25 each. In June, $1.00.

WHITE PINE BEE FARMS
ROCKTON, PA.
(The Home of Good Italian Queens)
Gleanings advertisers since 1911

SEEDS

LAST CALL—NECTAR and POLLEN producing shrubs, trees, and plants can yet be mailed this month when packed in spaghnum moss. Write today for free descriptive circulars. NICOLLET COUNTY NURSERY, St. Peter, Minn.

HELP WANTED

WANTED — Experienced helpers for queen yards, package bee yards and general bee work. Only honest, reliable men considered, no boozers. Give full information, age, experience, reference, and salary expected in first letter. YORK BEE COMPANY, JESUP, GEORGIA.

YOUNG MAN with some experience to help produce extracted honey. State age, habits, experience, and salary expected with board, room. Lavern Depew, Auburn, New York.

SUPPLIES

ATTENTION BEEKEEPERS IN MINNESOTA, Wis., Iowa, N. D., and S. D. Buy Lewis-Dadant Bee Supplies and Honey Containers in Minneapolis and save. Send for price lists. **TOP PRICES PAID FOR HONEY AND BEESWAX IN CASH OR TRADE. HONEY SALES COMPANY**, 1806-08 No. Washington Ave., Minneapolis 11, Minnesota.

FEED POLLEN SUBSTITUTES THIS YEAR. Dried Brewer's Yeast, 30c per lb., Soybean Flour, 15c per lb., 100 lbs., $7.95, f. o. b. Minneapolis. **HONEY SALES COMPANY**, 1806-08 No. Washington Ave., Minneapolis 11, Minnesota.

HONEY
Wanted

A Can or a Carload

Top Prices Paid

Will furnish 60-lb. cans if desired

C. W. AEPPLER COMPANY

Oconomowoc, Wisconsin

TURKEYS

Raise Turkeys The New Way. Write for free information explaining how to make up to $3000 in your own backyard. Address National Turkey Institute, Dept. 253, Columbus, Kansas.

MISCELLANEOUS

EARTHWORM CULTURE—Send postcard for valuable FREE bulletin, with review on "Intensive Propagation and Use of Earthworms in Soil Building". Thos. J. Barrett, Earthmaster Farms, Box 488-G, Roscoe, Calif.

WANTED TO BUY

WANTED—Two 8 frame Life-Time extractors. Will pay good price for machines in good condition. Allen's Honey Company, San Mateo, California.

WANTED TO BUY—The Beekeepers Directory by John S. Harbison. Old Gleanings in Bee Culture and Root catalogs before 1880. Also old envelopes advertising beekeeping. Irvin VanDevier, Medina, O.

MAGAZINES

THE INDIAN BEE JOURNAL—The only bee journal in India. Sample copy free. Yearly, 7s, 6d., ($1.50) International Money Order. Apply Editor. Indian Bee Journal, Ramgarh, Dist., Nain Tal, U. P., Iudia.

WESTERN CANADA BEEKEEPER, official organ of the Manitoba Beekeepers' Association. One year, $1.00; in combination with one year's subscription to Gleanings in Bee Culture, $2.25. Wallingford Building, Winnipeg, Canada.

Read the South African Bee Journal to be conversant with conditions from far afield. Subscription 5/ per year. For further particulars, write to the Hon. Treasurer, 14 Riebeck St., Worcester, C. P., South Africa.

THE BEE WORLD—The leading journal in Great Britain and the only international bee review in existance. Specializes in the world's news in both science and practise of apiculture. Specimen copy post free. 12 cents stamps. Membership in the Club including a subscription to the paper, 10/6. The Apis Club, L. Illingsworth, The Way's End, Foxton, Royston, Herts, England.

INTERESTED in Angora Goats? Read the Sheep and Goat Raiser, Hotel Cactus, San Angelo, Teaxs, the only ranch magazine published serving the Angora Goat industry. Subscription—$1.50, Sample copy—fifteen cents.

PUETT'S QUEENS

$1.00

Three Banded Italians

You Can't Beat the Best.

Puett Company

Hahira, Georgia

Gentle Northern Queens

From tested 3-banded Italian breeding stock

All queens are reared under natural conditions in large over-wintered queen-right colonies. Nature's way of producing large fully developed queens. These hardy northern strains of Italians are meeting with approval in many parts of the world.

Prices June 1st to Oct. 15th:

Young untested

1-24 ..... $1.10

25 up 1.00

Young tested

Any quantity 2.00

Queens shipped Airmail Postpaid

Approved package bees shipped from the South by express collect, 3-lb. pkg., $5.00 cash with order..

Prompt service, satisfaction.

Barger Apiaries

Carey, Ohio

3-Banded Italian Bees and Queens

We are booking for May delivery

	2 lbs.	3 lbs.
1 - 24	$4.00	$5.00
25 - 99	3.75	4.75
100 and over	3.50	4.50
Queens	1.10	

J. P. CORONA, Kenner, La.

Pollen Substitutes

	1 lb.	5 lb.	10 lb.	25 lb.
Brewer's yeast and soy flour expeller mixed 1 to 6		$0.75	$1.50	$3.00
Brewer's yeast	0.40	1.50	2.75	5.50
Soy flour			1.40	2.50
Dry skim milk	$0.40	1.50	2.75	5.75

Write for prices in larger quantities. Include postage if you wish it by parcel post. All prices collect, Bainbridge, N. Y.

M. Y. S. Company, Bainbridge, New York.

Look for this Sign
When You Want
QUALITY AT LOW COST!

Trade Mk. Reg.
U. S. Pat. Off.
KELLEY—"The Bee Man"

Queens

We offer three- banded Italian queens for shipment from Paducah starting April first.

1 to 24	$1.10 Each Postpaid
25 and up	1.00 Each Postpaid

The Walter T. Kelley Co.
Paducah, Kentucky

"SUNKIST ITALIAN QUEENS"

Will you miss getting a surplus due to an old, worn out queen? Avoid this by replacing those old queens with our young, vigorous, laying queens. We guarantee live delivery, health certificate, satisfaction. We have openings in May and after June first. Plan on requeening your apiaries after you gather in your crop, with our queens at a reduced price.

Queen May prices:
1-25, $1.10; 25-up, $1.00
After June first:
1-25, 0.90; 25-up, 0.80

Sunkist Bee Company
HOUMA, LOUISIANA — Route 2, Box 9, Tele: 1299-J

Our Queens Will Thrill You

In order to have strong colonies, each colony must have a vigorous queen which lays a maximum amount of eggs each day. Our queens are big, sturdy. fully mature, ready for the hive. Get some of these queens and watch the profits rise.

Prices before May 20th:

	Queens	2 lb. pkg.	3 lb. pkg.
1-25	$1.20	$3.75	$4.75
25-up	1.10	3.50	4.50

Prices after May 20th on queens:
1-5 .90 each; 5-up .80 each.

Let us quote you on requeening all of your hives. State the number of colonies you have and the approximate date you wish requeened in reply.

Bayou Bee Co. **Bourg, La.**
Raymond Viguerie, Owner.

MORE PACKAGES

Conditions allow us to accept orders for additional packages after May 10th.

Order Soon.

	1-24	25-99	100-up
2-lb. pkgs.	$3.85	$3.70	$3.50
3-lb. pkgs.	4.85	4.70	4.50

May Queens: $1.10-1.25 depending upon quantity ordered.
All orders guaranteed live delivery, payable 10 days before shipping.

GIRARDEAU APIARIES
J. H. Girardeau, Jr., Mgr. Tifton, Ga.

GASPARD'S QUALITY ITALIAN QUEENS AND PACKAGE BEES!

We are booked for the months of April and May, but we are taking orders for June delivery. 20% books your order; balance at shipping time. Prices as follows:

2-lb. package with queen,	$3.50
3-lb. package with queen,	4.50
4-lb. package with queen,	5.50
5-lb. package with queen,	6.50

Comb packages with one frame of brood and honey, add $1.50 per package.

J.H. GASPARD
HESSMER, LOUISIANA.

A Day at the Wisconsin Bee Culture Field Laboratory

(Continued from page 289)

In addition to the work in stock testing, Dr. Farrar and his staff have been feeding their bees, beginning the last week in March, patties covered with paraffin paper of soybean flour, three parts, and trapped pollen, one part. These patties are placed on top of the frames of colonies under observation (good, poor, and bad) to note the results in the increased amount of brood in a climate when zero comes every now and then during March.

The writer was not present when the first bees were taken away from the colonies, treated in the manner just described. He did not see the package of bees taken out of those colonies but Prof. H. F. Wilson did see it. I was present at the second shake of two pounds of bees from those same colonies which later on, in spite of the season, greatly increased in production of both bees and honey over the general average of good beekeepers (not necessarily the general average throughout the United States of good, poor, and bad). I was equipped with camera, and Dr. Farrar, Mr. Roberts, Prof. H. F. Wilson and myself opened up the colonies so that we could actually see what they were doing. The results are presented in a series of snap shots.

GOLDEN WEST!

Try our western-bred queens and bees, for they are the best. The war is over now and the Clifton Brothers are back together again to give more efficient service and better bees and queens than ever before. We are booking orders for spring 1946.

CLIFTON APIARIES

OROVILLE Box 684 CALIFORNIA

J E N S E N ' S

"Magnolia State" Strain Italian Package Bees and Queens

Quality, the highest. Service that brings 'em back for more. Because of very favorable weather conditions and improved breeding technique our queens are full of VIM, VIGOR, and VITALITY. They simply have that "Oomph" good queens should have, and uniformly so.

Still some more packages for late comers. Booster packages pay big dividends in bringing up those under-par colonies. Simply deduct the price of queens, according to the price bracket applying.

Prices:		With queens	
	Queen	2 lb pkg	3 lb pkg
1-24	$1.25	$4.00	$5.10
25-99	1.15	3.75	4.80
100-up	1.05	3.50	4.50

Jensen's Apiaries

Macon, Miss.

CARNIOLANS
CAUCASIANS

Sorry, cannot accept any more orders for package bees or colonies. Untested queens, both races, June 1st on.

Price, $1.00 each.

Albert G. Hann, Glen Gardner, N. J.

C A N S A N D B O T T L E S

Case of 16 5-gallon cans,	wt. 54 lbs.	$5.40
Case of 50 5-lb. tin pails,	wt. 26 lbs.	3.15
Case of 50 10 lb. tin pails,	wt. 40 lbs.	4.90

GLASS

Carton of 24 Economy style one pound bottles, wt. 11 lbs. 70c.
Carton of 12 Economy style two pound bottles, wt. 10 lbs. 42c.
12 cartons, 5-lb. glass jars, $5.00; 24 cartons, 5-lb. glass jars, $9.90.

Write for sample labels and other packing requirements.
Quick shipment from our Paducah stock.

Walter T. Kelley Company
PADUCAH, KENTUCKEY

MACK'S QUEENS

(They Speak for Themselves)

After the past few years in which our lives were disturbed and jeopardized, we are now approaching more normal times. Our two sons who have flown many a hazardous mission over enemy installations are now back with us, and we are exceedingly grateful. So with their help we will turn out MACK'S Hardy Northern Bred Italians in quantity. Owing to big demand for these Quality Queens we cannot promise shipment by return mail, but will ship in the order received. We suggest that you determine your needs well in advance and place your order accordingly.

To the best of our knowledge we are the only commercial breeder who uses Queen Right colonies to start and finish all queen cells. No queenless nor broodless bees used. Nature's own superior way. We have been using this method for more than 20 years. That's why we say of Mack's Queens, "They Speak for Themselves". Shipment starts about May 10th and the price is **$1.00** each, any number. Clipped if you say.

Postage Paid and Fully Guaranteed

Herman McConnell & Sons

Robinson **Route 2** **Illinois**

St. Romain's "Honey Girl" Italians

We expect to have caught up with our advance booking by **MAY 10th.** Package prices about May 10th to end of season as follows. Queen prices will be lower after June 10th.

Packages	1 to 4	5 to 11	12 up
2 lb. with queen	$4.00	$3.75	$3.50
3 lb. with queen	5.00	4.75	4.50
Queen alone	1.00	0.90	0.85

St. Romain's "Honey Girl" Apiaries
Moreauville, La.

Booking Orders for 1946 for Our Bright Three-banded Italian Queens and Package Bees.

PRICES:

	Queens	Packages and Queens 2 lbs.	3 lbs.	4 lbs.	5 lbs.
1-4	$1.25	$4.00	$5.10	$6.20	$7.30
25-99	1.15	3.75	4.80	5.85	6.90
100-up	1.05	3.50	4.50	5.50	6.50

We ask 10% deposit with orders booked in advance. We guarantee safe arrival and satisfaction.

TAYLOR APIARIES
Box 249, Luverne, Alabama

LOWER PRICES AFTER MAY 20th

QUEENS BY RETURN MAIL

LET US HAVE YOUR RUSH ORDERS. We can fill them without delay. We are not the biggest shippers of packages of bees and queens, but we rank with the best in quality and service. Safe arrival, satisfaction guaranteed. Health certificate furnished in U.S.A. and Canada.

PRICES TO MAY 20TH:

	1-24	25-100
2-lb. pkg. with queen	$4.00	$3.75
3-lb. pkg. with queen	5.00	4.75
Untested queens	1.25	1.10
PRICES AFTER MAY 20TH:		
2-lb. pkg. with queen	$3.75	$3.50
3-lb. pkg. with queen	4.75	4.50
Untested queens	1.00	.90

All Tested Queens double the price of Untested Queens

Package Bees F. O. B. Express. If by Parcel Post Add Postage.

NORMAN BROS. APIARIES, RAMER, ALA.

5,000 Packages — Italian Bees With

Queens. 5,000 Extra Queens Offered

During April and May.

3-lb. Packages with Queens $5.00

2-lb. Packages with Queens 4.00

By Express

Extra Queens 1.25

WE SERVE TO SERVE AGAIN!

SUNNY SOUTH APIARIES

MARKSVILLE, LA. I. CLARK, PROP.

Smith's Selected Bees and Queens

We offer our high grade packages and queens. Can supply queens immediately and packages June 1 and later. All June packages are baby bees and will give you good results. Place your order immediately to get early June dates. We give good weight and guarantee delivery. We rear queens for QUALITY so wish you would try them and see for yourself. Promp service and satisfaction is our motto.

May queens, 1 to 24, $1.25; 25 to 49, $1.15; 50 or more, $1.05.
June queens, 1 to 24, $1.10; 25 to 49, $1.00; 50 or more, .90.
June packages all with selected queens.
2 pound size, 1 to 24, $3.85; 25 to 49, $3.60; 50 or more, $3.40.
3 pound size, 1 to 24, $4.95; 24 to 49, $4.65; 50 or more, $4.40.
If queenless packages are wanted, deduct $1.00 per package.

Place your orders **Now** from above prices—you will be satisfied with our bees, queens, and service.

N. B. Smith & Company

Calhoun, Alabama

HANSON, HALL BEE COMPANY
Livingston, Alabama.
We are accepting orders for those thoroughbred Italian Queens for May and June delivery.

	May 10-31	June 1-30
1-24	$1.25	$1.10
25-99	1.15	1.00
100 up	1.05	.90

ABC and XYZ of Bee Culture

1945 Edition

We have a few slightly damaged copies of this edition that we are offering for only $2.00 postpaid.

Limited Stock

Only $2.00

The A. I. Root Company

Medina, Ohio.

BEEKEEPERS' BEST FRIEND

We must build for the future. The present demand for honey may slacken somewhat if and when sugar again becomes available in quantity.

The American Honey Institute

has been creating consumer interest in honey since 1928. Let's back the Institute with our dollars. . . . .

The American Honey Institute

Commercial State Bank Building

Madison, Wisconsin

D. B. Eells

3 - Banded Italian Queens

Few Packages

To May 31st	1-24	25-99	100-up
Queens	$1.10	$1.05	$1.00
2-lb. and queen	3.90	3.80	3.70
3-lb. and queen	4.90	4.80	4.70

QUALITY—RAPID, HONEST SERVICE
EELLS HONEY & BEE COMPANY, Houma, La., U. S. A.
(In the Sunny South)

Better Bred Queens — Three-Banded Italians

We will have plenty of packages after May 20
2-lb. packages with queens.....$3.50
3-lb. packages with queens.....4.50
Write for prices in larger quantities.
Queens 90 cents each, any quantity.

Calvert Apiaries, Calvert, Alabama

Shaw's Package Bees and Queens

We are booked for all package bees we can supply up to May 15th. Will have plenty of Italians also daughters of queens bred for resistance. Can start sending queens any time after April 15th.

PRICES THROUGH MAY 20th

Lots of	Queens	2-lb.	3-lb.	4-lb.	5-lb.
1 to 24	$1.25	$4.00	$5.10	$6.20	$7.30
25 to 99	1.15	3.75	4.80	5.85	6.90
100 up	1.05	3.50	4.50	5.50	6.50

AFTER MAY 20th

Lots of	Queens	2-lb.	3-lb.	4-lb.	5-lb.
1 to 24	$1.10	$3.85	$4.95	$6.05	$7.15
25 to 99	1.00	3.60	4.65	5.70	6.75
100 up	.90	3.35	4.35	5.35	6.35

A. E. Shaw **Shannon, Miss.**

Pure Italian Bees and Queens

"Queens" **"Packages"**

Live delivery guaranteed. No C.O.D. orders. Order direct from this ad. 20% books your order.

Baby Bees Overweight Packages

Prices from April 1 to June 1:

	Queens	2 lb.	3 lb.	4 lb.	5 lb.
1-24	$1.25	$4.00	$5.10	$6.20	$7.30
25-99	1.15	3.75	4.80	5.85	6.90
100-up	1.05	3.50	4.50	5.50	6.50

C. W. Baker

Western Union — Post Office
Epes, Ala. — **Sumterville, Ala.**

"We have never had any disease."

Italian Bees and Queens for 1946!

Lots	Queens	2 lbs.	3 lbs.	4 lbs.
1-5	$1.15	$4.00	$5.00	$6.00
6-24	1.10	3.85	4.75	5.85
25 up	1.00	3.75	4.50	5.75

TERMS: 20 percent deposit, balance at shipping date.

For a bigger and better season get our line-bred Italians noted for their hardiness, vigorousness, and prolificness.

B. J. Bordelon Apiaries

Moreauville, La.

QUEENS

All Breeders Northern record producers of the finest Leather Italian Stock.

Our system of holding queens in large nuclei until egg laying ability is proven assures you of the finest queens to be had at any price.

Prices:

Before June 1st:
1 to 24, 1.25 ea.; 25 or more, $1.12 ea.
After June 1st:
1.00 each, any number.
We can still ship packages after May 15th.

The Rich Honey Farms
Jeanerette, La.

Italian Pkg. Bees and Queens

	1-24	25-49	50 up
2 lbs. with Queen	$3.50	$3.40	$3.20
3 lbs. with Queen	4.50	4.40	4.20

Guarantee safe arrival, freedom from disease, and satisfaction.

No C. O. D.

Oscar Arnouville
Box 35 Hamburg, La.

THRIFTY BEES

Combless packages and queens. Open shipping dates any time after June 1st.

Write for prices

Three-banded Italians only. THRIFTY bees are guaranteed to please.

Breeders since 1892.

W. J. Forehand & Sons
Fort Deposit, Alabama

NORMAN'S
Package Bees and Queens

Now Ready

Stop - Read - Compare

Yes, we are back again offering you the Highest Quality 3-band Italians obtainable. Queens purely mated. Full weight packages, safe arrival, and satisfaction guaranteed. Health certificate furnished.

Don't Delay, Order Today

Unt. Queens	$0.80
Tested Queens	1.60
2 lb. pkg. with queen	3.75
3 lb. pkg. with queen	4.75
4 lb. pkg. with queen	5.75

John A. Norman
Ramer, Ala. Route 2.

RED STICK APIARIES & CO.
PACKAGE BEES AND QUEENS
Twenty six years as Commercial Queen Breeders.
Oldest Combless Package Bee Shippers in Louisana.

PRICES AFTER JUNE 1st:
RESISTANT STOCK
QUEENS AND BEES
2-lb. pkgs. with Queens $3.50
3-lb. pkgs. with Queens 4.50
QUEENS EACH .90 CTS
ANY NUMBER

RED STICK APIARIES & CO.
Main Office, 125 Lessard St.
Donaldsonville, Louisiana.

May PACKAGES and QUEENS

We have plenty of bees and open shipping dates for both queens and packages.

This month is the time to add queenless packages to those weaker colonies. It will stimulate brood rearing and give them a wonderful boost.

No disease of any kind in our colonies. State Health Certificate with each shipment.

	1-24	25-99	100 up
2 lbs. bees with queen	$4.00	$3.75	$3.50
3 lbs. bees with queen	5.00	4.75	4.50
Queens	1.25	1.15	1.05

For queenless packages, deduct price of queen.

W. E. PLANT
Hattiesburg Rt. 2 Mississippi

Live and Learn

(Continued from page 271)

ness, and it wasted too much time anyway hunting her out. And besides, unless you were there when the swarm came out, it didn't do any good because the bees would return to the hive and come out with the first virgin to hatch. Spreading brood seemed to intensify their desire so far as I could see. Once they get the fever, all the room in the world wouldn't cool them off.

This might be heresy, too, but I don't requeen every August either, unless I want to improve the stock, or the queen is obviously failing. I don't wait for August for that as a rule, but just make a check on general principles. I don't think that annual requeening has much effect on swarming—at least my August queens act the same as any others.

So, that's about all that I can say. Anyhow, it seems to me that the first and most important rule is to start in April to prevent the swarms from rising in May and June.

KNIGHT'S

Package Bees and Queens

Leather Colored Italians

The best honey gatherers.
Unable to supply until May 20th.

Prices, including queens in packages:

	2 lbs.	3 lbs.	4 lbs.	5 lbs.
1 to 24	$3.85	$4.95	$6.00	$7.00
25 to 99	3.50	4.50	5.50	6.50
100	3.35	4.35	5.35	6.35

Extra queens, $1.00.
No charge for clipping.

Jasper Knight

Hayneville, Ala.

Tanquary's Quality and Service

We are doing everything possible to handle all the business we possibly can and still not sacrifice QUALITY and SERVICE.

We have a few shipping dates left, ORDER NOW, that you might get this SERVICE.

May We help You?

Write, wire, or call your orders in.

PRICE LIST

Quantity	1 to 24	25 to 49	50 to 99	100 up
2-lb. pkg. with queen	$4.15	$4.05	$4.00	$3.70
3-lb. pkg. with queen	5.15	5.05	5.00	4.70
4-lb pkg. with queen	6.15	6.05	6.00	5.70
Tested Queens	2.10	2.05	2.00	1.75
Untested Queens (Mated)	1.35	1.30	1.25	1.15

Queenless packages, deduct $1.10 per package.

Package bees f. o. b.----Queens Postpaid.

After May 20th QUEENS 85c Any number.

Tanquary Honey Farms, Inc., Lena, S. C.

Over Fifty Years with the Bees

AGE * ABILITY * EXPERIENCE

PACKAGE BEES QUEEN BEES

Delivery After May Fifteenth

Over half a century of Select Breeding. All queens are raised and reared under normal hive conditions, as exceptionally large size nuclei colonies are used exclusively. We guarantee all of our queens to be purely mated and laying full capacity when caged. In this way, for the price of untested queens all advantages of tested queens are assured.

All package bees are guaranteed to be slightly overweight. Safe arrival warranted. Personal supervision in the production of both queens and packages maintained at all times.

Prices after May 15th.

Lots of:	Queens	2 lb.	3 lb.	4 lb.	5 lb.
1-24	$1.10	$3.85	$4.95	$6.05	$7.15
25-99	1.00	3.60	4.65	5.70	6.75
100-up	.90	3.35	4.35	5.35	6.35

For Queenless Packages Deduct Price of Queen

Payable in U. S. Funds

M. C. Berry and Son

Montgomery Box 684 Alabama

Oldest Active Package Shippers in U. S. A.

ITALIAN BEES.....REDUCED PRICES.....QUEENS

After May 20th our prices will be as follows:

	Queens	2 lb. Pkgs.	3 lb. Pkgs.
1-24	$1.10	$3.85	$4.95
25-99	1.00	3.60	4.65
100-up	.90	3.35	4.35

Where SERVICE and QUALITY is a reality.

BESSONET BEE COMPANY

Donaldsonville, Louisiana.

Three Banded Italian Package Bees and Queens

Here is where you can get prompt shipments on Italian Package Bees and Queens after May 5th. So get your order in now. Full weight and live arrival guaranteed.

Prices after May 5th:

Lots of:	Queens	2 lb.	3 lb.	4 lb.
1-24	$1.10	$3.85	$4.95	$6.05
25-99	1.00	3.60	4.65	5.70
100 up	.90	3.35	4.35	5.35

Write for Special Prices on Queens to be delivered

FARRIS HOMAN

Shannon, Mississippi.

This photo shows a portion of one of our queen yards containing over 6,000 nuclei

ITALIAN PACKAGE BEES - QUEENS

2-lb. with queen	$4.00
3-lb. with queen	5.00
Extra queens, each	1.25

QUEENS
Light Italians

WE SOLICIT QUEEN TRADE FROM LARGE QUEEN USERS ALL OVER THE NATION!

We were never out of queens in 1945, in spite of the unusually heavy demands. Place your order where you can rely on getting your queens when you want them. Write for our special prices on large orders.

OVERBEY APIARIES, BUNKIE, LA.
Phone 657 day or night

Talks to Beekeepers

(Continued from page 287)

such a position that the bess may cluster on the inside just below the handle. After the swarm has clustered it may be carried to the hive and dumped in front.

A comb of brood taken from another hive and put into the hive intended for the swarm will attract the bees and cause them to get established readily in their new home.

After two days the parent hive, which was moved to the new location, can be given a quarter turn to face the same direction as the hive containing the swarm. Then, after seven days, this parent hive may be moved to another location at least fifteen feet away. The moving should be done in the middle of the day when a large percentage of the old bees are in the fields. When these field bees return and do not find their hive, they will easily find their way into the hive on the old stand containing the swarm and will help to increase the population of this new hive and in turn a larger crop of surplus honey may be expected.

In a short time the old hive that has been moved to the new location should have a young laying queen. If swarming occurs early in the season and the honey flow is long drawn out, this parent hive may store some surplus, but as a rule no surplus may be expected from the old parent hive the same season.

* * * *

STIRRING THE WITCHES' BREW

(Continued from page 270)

tered thinly among the cells of healthy brood. The bees had been ranging out in the outer combs away from those occupied by the queen with the brood, and were doing a good job of house cleaning. Only the outer combs still showed much of the old sealed diseased brood. The rest had been practically all uncapped and the bees were busy removing scale. I wish that I had an observation hive and the time so that I could see how they go about this unique house-cleaning operation.

At this time we gave each of the two colonies under treatment a half gallon of sugar syrup made two parts sugar to one water with a teaspoonful of cocothiazole added per gallon. At this writing it looks like the experiment will be a success, but let us be pessimists for a little longer, for there is still plenty of time for things to go wrong. More on the subject next month.

(To be continued)

HELP FOR YOU . . .

is available in daughter queens of "DR" stock which has been improved yearly by scientific selection. It will aid you in your fight against American foulbrood. The performance of this stock is why beekeepers are placing repeat orders. Satisfaction is what you get with the use of this stock. No other stock can offer the quality of parentage, of rearing methods and of testing service.

SO WHY NOT GET THOSE QUEENS WHICH GIVE YOU THE GREATEST VALUE?

Write for shipping dates. No change in prices for this season.

Iowa Beekeepers' Association
State House, Des Moines 19, Iowa

DEPENDABLE 3-BANDED QUEEN BEES

Place your order NOW for Summer and Fall Delivery

June 1st, through October.

1 to 11, $1.00 each
12 to 99, .90 each
100 or more, .80 each

TERMS; Cash with order

Live delivery and Satisfaction Guaranteed,

Health Certificate with each shipment;

John C. Hogg, Tifton, Ga.

QUEENS

WHY NOT GET A FULL CROP OF HONEY?

Requeen with Dexter's Queens

3-BANDED ITALIANS

Get your queens from improved parentage, produced under superior conditions, and from stock which is checked for honey getting performance. All our breeders are northern producers.

$1.00 EACH, Any Number
Quick Delivery
DEXTER BROTHERS
Myrtle Beach, S. C.

THREE BANDED Italian Bees and Queens

For May shipments we have plenty of bees and queens and good labor to take care of your orders.

	Queen	2 lb.	3 lb.
1-24	$1.25	$4.00	$5.00
25-99	1.15	3.75	4.75
100-up	1.00	3.50	4.50

QUEENS are daughters of stock bred for resistance to disease.

AFTER MAY 20th, 15% reduction on all orders large or small. Bees, Queens, and service you will like.

Lucedale Apiaries
Lucedale, Mississippi

ITALIAN QUEENS

Place Your Order Now
Prices after May 10th:

1 to 50.....$1.25 each.
50 and over.....$1.00 each.

Terms:
10% with Order,
Balance before Shipment

John S. Shackelford
Live Oak. California.

QUEENS * * QUEENS

Three Banded Italian queens, best of quality. Satisfaction guaranteed; a health certificate with every order.

1 to 25, $1.25 each; 25 to 50, $1.15; 50 and up, $1.05.

Alamance Bee Company
Geo. E. Curtis, Manager., Graham, North Carolina.

Ray's Apiaries

Lynn Williams
QUEENS AND PACKAGE BEES FOR SALE
Route 3, Box 152
OROVILLE, CALIFORNIA

PACKAGE BEES AND QUEENS

Leather Colored Italians
Bred for Production

Prices of Package Bees with Queens

Lots of	2-lb.	3-lb.	Ex. Queen
1 to 24	$4.00	$5.00	$1.25
25 to 99	3.85	4.80	1.10
100 or more	3.75	4.70	1.10

Terms, 25% deposit to book order, balance ten days before shipping date. We replace any bees that die in transit if it is our fault, if it is the carriers' fault, file claim with them. We are now shipping. Old customers will be given preference.

THE ISLAND APIARY

Collier City, Fla.

Three Banded Queens - Italian

Leather colored Strain
Any Quantity, $1.00 each; Over-weight 3-lb. package and queen, $5.00 each

Gooch Apiaries
Farmersville, Texas.

ITALIAN BEES AND QUEENS
We are booked up on package bees until May 10th

Prices:

2 lb. package with queen	$3.45
3 lb package with queen	4.45
4 lb. package with queen	5.45
Queens, each	1.10

HOMAN BROS., Shannon, Miss.

Everybody's Talking About
The Beekeepers' Magazine
It's Spicy Up-to-Date Practical
$1.50 a year 3 yrs. for $3.00
Rt. 5, Box 181, Lansing, Mich.

PACKAGE BEES!

are necessary in your program for 1946. Sugar is going to be scarce for sometime yet and honey will still demand top prices.

To produce the maximum crop replace winter loss and fill all available equipment with **PACKAGE BEES!**

Boost wintered over colonies with queenless bees.

Supplies and labor are either on hand or available to assure you prompt service on orders placed early!

2-lb. with queen $3.50
3-lb. with queen 4.50

SATISFACTION GUARANTEED

Rossman & Long

P. O. Box 133, Moultrie, Ga.

YOU MUST BE SATISFIED

Quality and Production-bred Italian Queens

We are completely sold for April, but can still fill May orders.

10% will book your order.

Write us now!

1-24 .....$1.10
25-up 1.00

HEART O'TEXAS APIARIES

P. O. Box 1203
WACO, TEXAS

PACKAGE BEES

This has been a very good spring for the production of bees, so we can handle some additional orders. If you have not got your bees yet, rush your order in and we will give it our prompt attention.

Also, we have lots of good queens for last of May and June delivery.

CAUCASIANS OR ITALIANS

Prices Through May 20th:

Lots of:	Queens	2 lb.	3 lb.	4 lb.	5 lb.
1-24	**$1.25**	**$4.00**	**$5.10**	**$6.20**	**$7.30**
25-99	**1.15**	**3.75**	**4.80**	**5.85**	**6.90**
100-up	**1.05**	**3.50**	**4.50**	**5.50**	**6.50**

Prices After May 20th:

Lots of:	Queens	2 lb.	3 lb.	4 lb.	5 lb.
1-24	**$1.10**	**$3.85**	**$4.95**	**$6.05**	**$7.15**
25-99	**1.00**	**3.60**	**4.65**	**5.70**	**6.75**
100-up	**.90**	**3.35**	**4.35**	**5.35**	**6.35**

For Queenless Package Deduct Price of Queen

Payable in U. S. Funds

THE STOVER APIARIES

Mayhew, Mississippi

CHASING DOWN THE HONEY CROP

(Continued from page 264)

prevent abnormal brood rearing, there are beekeepers who move their bees to the eucalyptus groves to build up weak colonies that otherwise would have to be fed. Good or bad, the eucalyptus is certainly important in that it can greatly influence the season's yield. Some beemen say that it has been responsible for running strong colonies into starvation. Others say it has also been responsible for saving weak colonies from dwindling away. It appears that the advantages and disadvantages of this honey source are infuenced a great deal by the weather.

Two other honey plants out here that also cause much scratching of the head are the orange and mountain sages. Usually the orange comes on first, but sometimes the sage follows right on the heels of the orange. Sometimes they blossom almost concurrently. When they come out together then the beekeeper doesn't know whether to move to the orange or stay on the sage.

In the colder regions of the North bees generally winter better when they are packed in two stories. Here the opposite is true. Although we have no snow and no packing is used, bees consume more honey when they have the extra space to heat. It takes less honey here to winter a colony of bees so the extra room is not needed. Most commercial bees are run in two stories, however, during the active season. The second story is added just as soon as the single brood chamber appears to be pretty well filled with bees in the spring.

Northern beekeepers who seldom if ever move their bees to different sources are free of a lot of headaches. A commercial beekeeper recently told me that if he could be assured of a 50-pound average every year in one location he would give up the migratory game. As he says, it's hard, mean work to move bees. You have to pay for each location so that a yard of bees moved to four or five different locations within one season can run up the overhead fast. The wear and tear on the equipment is no small item.

Although out here we all do a lot of grumbling about the work and expense of moving bees it goes without saying that the beekeeper who gets the honey crop is the one who is willing to chase it down. The nectar flow in California extends from January to October. This year it appears that it will be an all-year flow with eucalyptus bridging the gap. The nectar season begins in January with eucalyptus and willow. Next comes a variety of wildflowers on which the bees build up for the orange flow in April. It might appear that since the orange is irrigated it would be a fairly dependable source of honey. It is seldom a total failure, but often the total crop is small. It is very sensitive to climatic conditions. As an example of how it will act, last spring a beekeeper had his bees in two different orange locations. The yards were five miles apart. One yard produced a 75-pound average; the other yard 15 pounds per hive. Beekeepers are probably harder hit by poison spray in the orange locations than in any other location. It is truly hard to find an orange location that doesn't have a lot of other bees practically on top of yours. However, some commercial men maintain that if conditions are right, few of the orange locations are over-crowded in spite of the fact that there appears to be more bees than blossoms.

Los Angeles, Calif.

• • •

THE ONLY WORTHWHILE
QUEEN EXCLUDER
on the market

Chrysler's All Steel Electric Welded Queen Excluder allows maximum bee passage, better ventilation, more honey production. No wood, no sharp edges to injure bees, no burr combs. New rust proofing process. So durably made and accurately spaced that it is permanently Queen excluding and will last a lifetime. Why not try a carton of 10? Send for Circular E-2.

W. A. CHRYSLER & SON
Chatham - Ontario - Canada

GARON'S PACKAGE BEES AND QUEENS

SEND US YOUR ORDER PROMPTLY FOR PACKAGE BEES FOR SHIPMENT AFTER MAY 25th.

Progeny-Test 3-Banded Italian Strain. Also, Charles Mraz's and other Reliable Breeders' Strains of High Quality Daughters of Stock Bred for Resistance.

Quantity	2-lb. pkg. w/q	3-lb. pkg. w/q	Queens
1-9	$3.70	$4.70	$1.10
10-24	3.60	4.60	1.05
25-99	3.55	4.55	1.00
100 and up	3.45	4.45	.95

Dependability - Quality - Service

Garon Bee Company, Donaldsonville, La.

Three Banded Italian Bees and Queens

PRICES UNTIL MAY 20th

Quantity	Queens	2 lbs.	3 lbs. With Queen	4 lbs.
1-24	$1.25	$4.00	$5.10	$6.20
25-99	1.15	3.75	4.80	5.85
100-up	1.00	3.50	4.50	5.50

For queenless packages, subtract price of queen.

We ship only overweight packages of young bees, and young queens guaranteed to be purely mated

Direct all mail to us at LEROY, ALA., and telegrams to us at JACKSON, ALA.

Holder Apiaries, Leroy, Alabama

(In the mild climate of the deep South)

C A R N I O L A N S

PACKAGE BEES WITH CARNIOLAN QUEENS!

2-lb. bees with queen. $4.00; 3-lb. bees with queen, $5.00.
Over 24 packages, deduct 25c each package.
We offer 2000 packages, MAY DELIVERY.

EPHARDT HONEY FARMS, Plaucheville, Louisiana

The John M. Davis Strain

Bred the Davis Way

Italian Queens!

Guaranteed purely mated and to satisfy you in every way or your money refunded.

You be the judge!

	1-24	25-up
Young Laying Queens	$1.25	$1.15
Young Tested Queens	1.50	1.40

After June 30th Untested $1.00 each, any number.

LITTLE'S APIARIES

P. O. Box 122, Shelbyville, Tenn.

Three Band Italian Bees With Queens for 1946!

Plenty Queens March 1st through season, $1.25 each.

	1-24	24-48	48-up
2-lb. package	$4.00	$3.75	$3.60
3-lb. package	5.00	4.75	4.60

20% deposit books order balance ten days before shipping.

E. R. RALEY

Box 1610, Daytona Beach, Fla.

Three Band Italian

PACKAGE BEES

Full weight, prompt shipment, young bees. State Health Certificate with each shipment. Live arrival guaranteed. Replacement or refund made promptly upon receipt of bad order from your express agent.

Our prices until June 10, 1946 in U. S. Funds:

	Each	With Queens			
	Queens	2-lb.	3-lb.	4-lb.	5-lb.
1-29	$1.10	$4.00	$5.10	$6.20	$7.30
30 or more		3.50	4.50	5.50	6.50

For Queenless Packages deduct $1.10 each from above prices. If queens are wanted introduced, add $1.10 to the price of each package.

JACKSON APIARIES

Funston, Ga., U. S. A.

DIXIELAND'S

Leather Colored Italians, Package Bees and Queens for May and June Delivery

Unable to supply until May 20th

	Queens	2-lb. pkg	3-lb. pkg.	4-lb. pkg.
1-24	$1.25	$4.00	$5.10	$6.20
25-99	1.15	3.75	4.80	5.85
100-up	1.05	3.50	4.50	5.50

Prices after June 1st

	Queens	2-lb. pkg	3-lb. pkg.	4-lb. pkg.
1-24	$1.10	$3.85	$4.95	$6.05
25-99	1.00	3.60	4.65	5.70
100 up	.90	3.35	4.35	5.35

Dixieland Apiaries

Greenville, Alabama

Package Bees and Queens Three-Band Italians

Shipment after May 10th.

Packages by Express collect. Queens by mail postpaid. Safe delivery guaranteed or replaced without cost. All packages with queens.

Prices; May shipment:

	Queens	2 lb.	3 lb.	4 lb.	5 lb.
1 to 24	$1.25	$4.00	$5.10	$6.25	$7.45
25-up		3.75	4.85	5.95	7.20
Prices after June 1st:					
1 to 24	1.00	3.80	4.90	6.00	7.15
25-up	.95	3.60	4.65	5.70	6.85

No Disease. State Inspected.

Order as early as possible and send cash in full with order. Canadian orders payable in U. S. Funds. We are booked to capacity through April and early May.

Crenshaw County Apiaries

Rutledge, Alabama, U. S. A.

We Need Pictures
for
THE BEEKEEPERS ITEM

To dress up our magazine, TO MAKE IT INTERESTING AND READABLE, we need many pictures each month showing new devices and equipment, nicely painted and arranged apiaries. The pictures must be clear and sharp and must not have been used previously in other magazines. For such pictures that we use we will pay you $1.00 each and $5.00 per page for articles that we accept for publication.

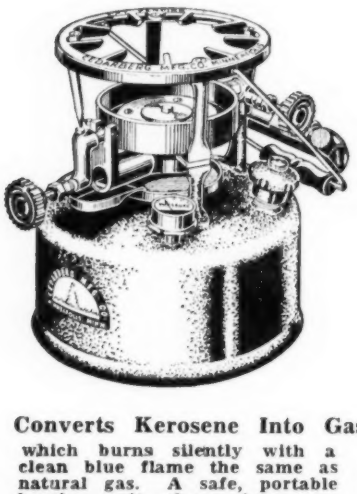
Read The Item

If you have not seen the April edition of the ITEM write now for a sample copy. We are putting new life in this old magazine and we believe that if you see one copy you will decide that you can not afford to get along without it. Write for your FREE SAMPLE COPY.
SUBSCRIPTION RATES: 1 year, $1.00; 2 years,$1.50; 3 years, $2.00.

THE BEEKEEPERS ITEM

Walter T. Kelley, Editor. Paducah, Ky.

CEDARBERG
UTILITY FURNACE
Price.....$18.40



Converts Kerosene Into Gas
which burns silently with a clean blue flame the same as natural gas. A safe, portable heating unit where clean controllable heat is required.

M. J. BECK COMPANY
Box 7, Lansing 1, Michigan

QUEENS
Select Three Band Italians
Prices after May 20:
1-24, $1.10; 25-99, $1.00; 100 up, $0.90.
Place your order now for delivery May 20 and after. Replace those poor queens and be SURE of a honey crop.
Eugene D. Cutts, Citronelle, Ala.

GARDEN INSECTICIDES
TRITOX—FOR GREATER PRODUCTION. HIGHEST QUALITY GARDEN INSECTICIDE FUNGICIDE. A COMPLETE DUST OR SPRAY PROGRAM. TRITOX is the recognized standard to meet your garden needs. Does not contain DDT. Special price to fellow beekeepers, 5 lbs. postpaid $1.25. Money back guarantee.
TRITOX CHEMICAL COMPANY
Washington Indiana

Italian Queens
After May 5
$1.00 each
A. M. Peach
Baldwyn, Miss.

Here's Your Bargain

in **CUSHION MUMS.** For $1.00 we send you at planting time our assortment of six colors hardy field grown plants. Colors bronze, rose, red, white, yellow, and red with yellow center. You will have hundreds of blossoms all fall. Mail your order today.

Riverside Nurseries,
Dept F8 Route 5 Elkhart, Ind.

Send for free catalog—hundreds more!

—GOT A HOBBY?--

Keep up with the latest developments in your field. Here's a group of magazines that specialize in a particular subject! Send your subscription today!

Gleanings in Bee Culture, $1. per year
Beekeepers' Item, $1.
American Bee Journal, $1.

DAIRYING
American Dairy Goat News, m., $1
Dairy Farmers' Digest, $1.
Dairyland News, s. m., 50c.

FARMING
The Country Book, quarterly, $1.
Farmers' Digest, m., $2.

FRUIT
Better Fruit, m., $1.
Eastern Fruit Grower. $1.

LIVESTOCK
Berkshire (Hog) News, m., $1.
Chester White (hog) News, m., $1
Southeastern Cattleman, $1.
Pacific Stockman, $1.
The Sheepman, $1.
Arizona Stockman, m., $1.50
Plantation Stockman, m., $2
Coastal Cattleman, m., $1.

HORSES
The Horse, bi-monthly, breeding, schooling, training, horse sports, $5.
Thoroughbred (Horse) Record, w., $4.
Rider and Driver, m., horse-sport-pleasure, $3.50
Spokesman & Harness World, m., $1.

PIGEONS
American Pigeon Journal, Squab-fancy, $1.50
Pigeon News, fancy only, $1.50

RABBITS
Small Stock (rabbits, cavies), $1.
American Rabbit Journal, m., $1.
Inter. Comm. Rabbit Journal, (Angora) $1.
American Angora Rabbit Magazine, $1.00 a year.

OTHER SPECIALTIES
The Soybean Digest, $1.50
New Agriculture (sugar beets only) $2
Small Com. Animals & Fowls, 50c
Co-operative (Farmers) Digest, $2
Modern Game Breeding, m., pheasants, $3.
Black Fox Mag., m., fox, mink, $2
Frontiers (natural history) 5 issues, $1
Canary Journal, m., $2.
Tailwagger, m., (Dogs) $2.50.
Eagle Mail Order News, m., $1.
Good Health, m., $1.
Canary World, m., $1.25.

All magazines are monthlies unless otherwise noted; prices are for one full year. Satisfaction guaranteed. All orders are handled promptly and acknowledged. Rush your subscription today. Remit in any way convenient to you

MAGAZINE MART

Dept. G B Plant City, Florida
Sample copies at single copy prices.

Package Bees and Queens

Available May 20.

2 lb. pkg. with queen $3.85 each.
3 lb. pkg. with queen 4.95 each.
Queens 1.10 each

Sullivan's Apiaries

Gilbertown, Alabama.

LIGHT ITALIAN BEES AND QUEENS

for June deliveries with selected young laying queen.

	2 lbs.	3 lbs.
1 to 24	$4.00	$4.80
25 to 49	3.75	4.60
50 and up	3.50	4.40

Young laying queens, untested, 1 to 9, $1.00 each; 10 to 24, 90c; 25 or more, 80c. Write for prices on large lots. Health certificate with each shipment.

PLAUCHE BEE FARM
Hamburg, Louisiana.

ITALIAN BEES AND QUEENS

Booked up through May 15th. Large quantities of Top-Quality 3-band Italian queens and over-weight packages available after that date.

Health certificate furnished. Live delivery guaranteed.

Queens	2 lb. pkg.	3 lb.pkg.
$1.00	$3.40	$4.40

Orders booked without deposit.

PORT GIBSON APIARIES

Port Gibson, Miss.

ITALIAN QUEENS

after May 10th. $1.00 each.

We would appreciate the opportunity of serving you.

RAPIDES APIARIES
Winnfield, Louisiana

York's Package Bees and Queens for 1946

Quality Bred Italians

No Change in Price for Coming Season

PACKAGE BEES WITH YOUNG LAYING QUEENS

Quantity	1 to 2	3 to 27	30 to 96	99 up
2-lb- pkgs.	$4.25 each	$4.10 each	$3.95 each	$3.75 each
3-lb. pkgs.	5.25 each	5.10 each	4.95 each	4.75 each
Extra Queens	1.30 each	1.25 each	1.25 each	1.25 each

Queenless Packages, deduct $1.10 per package.

Booking orders now for 1946, same terms and price. We thank our customers for their patronage and will be prepared to serve you better with highest quality the coming season. A large number of buyers have already placed orders for the coming season and if you have not done so, we urge you to do so without delay for better choice of shipping dates. There is every indication of an extra heavy demand. Order direct from this ad and save time.

YORK BEE COMPANY, Jesup, Ga., U. S. A.

The Universal Apiaries

ITALIANS! **QUEENS!** **CAUCASIANS!**

Daughters of Queens bred for Resistance — Bred to Italian Drones
All three races bred in separate yards.

2-lb. package bees with queen, $4.00; 3-lb. package bees with queen, $5.00
Extra Queens, $1.25 each

OVER 25 YEARS A SHIPPER IN U. S. A. AND CANADA

Sulfathiazole used in feed at no extra cost to you.

MASTER MIX POLLEN made from Soybean flour, Cottonseed meal, Brewers yeast, Skim milk, Natural pollen, Invert sugar and Sulfathiazole, 10-lb. pail, $2.50 six pails, $13.50. Send for FREE CIRCULARS.

BLUE BONNET APIARIES, Rt. 2, Box 23, WESLACO, TEXAS

Package Bees, Old Line Bred Since 1924

Queens, $1.10; 2-lb. Package, $3.80; 3-lb. Package, $4.80; Including Queen; Extra Pound Bees, $1.15

Place your order early to get your shipping date when wanted. War II veterans first served. Spring queens raised from stock of over 200 pound production after pulling bees for packages all spring till in July, 1945. Also daughters of queens bred for resistance to disease.

Homer W. Richard : Rt. 3, Box 252-A, El Dorado, Ark.

LEATHER COLORED ITALIAN QUEENS
MIDDLE TENNESSEE APIARIES

1 to 25, $1.25; 26 on up, $1.10—From Imported Strains.
¼ books orders. Balance before shipping. Add 5 cents for all queens by air.
(All Queens after June 15, $1.00)

J. B. TATE & SON

1029 No. 4th St., Nashville 7, Tenn. **Tel. No. 34509M**

NOTICE

Write for prices for having your wax made up or outright purchase of

SCHMIDT'S

Economy Foundation

Not excelled for quality strength and workmanship

Satisfaction Unconditionally Guaranteed

Oscar H. Schmidt & Sons

R 4. Bay City, Mich.

Lotz Quality Sections

featuring

Top quality material--Glossy polish--Smooth dovetails--Oval V-grooves--Accurate Dimensions--Fine workmanship--Reasonable prices.

With the ever-increasing demand for comb honey why not produce more, and increase your profits? Remember there is no ceiling price on comb honey.

Prices in our 1944 pricelist still in effect.

AUGUST LOTZ COMPANY

Manufacturers and jobbers of Bee Supplies

Boyd - Wisconsin

the Hubbard APIARIES

WRITE FOR FREE CATALOG

Quality Bee Supplies. Factory Prices
Prompt Shipment from Stock
Satisfaction Guaranteed

THE HUBBARD APIARIES

Manufacturers of Bee Supplies

ONSTED, MICHIGAN

Australian Beekeeping News
The Leading Bee Journal of the Southern Hemisphere is the
"AUSTRALASIAN BEEKEEPER"
any time. Inquire for International Mon-Subscription 5 shillings per year. Start any time. Inquire for International Money Order for 5 shillings (Australian) at your Post Office
Write now to the Editor, P. O. Box 20, West Maitland New South Wales Australia

OLDEST BEE JOURNAL IN THE ENGLISH LANGUAGE

Keep up on markets, practices, scientific data, regulations, plant possibilities.

1 year—$1.50; 3 years—$3.00. U. S. and Canada. Foreign postage 25c a year additional.

AMERICAN BEE JOURNAL
Hamilton, Illinois

CONTENTS

MAY, 1946

Spring Management—Grant D. Morse	257-259
Without Examining Frames—W. J. H. Dicks, B.S.A.	260-261
Chasing Down the Honey Crop—Clarence Tontz	262-264
He Does the Impossible—Alexander De Griaznov	265-267
Mixing Sulfathiazole in Syrup for Feeding	267
Stirring the Witches' Brew—Leon C. Nieb	268-270
Live and Learn—Propolis Pete	271
Honey Preferred—Mrs. Benj. Nielsen	272
Can Bees Foretell the Weather?—George S. Whittaker	273
Chasing Away Bee Eaters—C. H. Pease	273
Bees in Balkans	273
Queen Supersedure—Allen Latham	274
Sixty Five Years Ago—S. H. Burton	274
Second Glances—C. M. Isaacson	275
From North, East, West and South	276-281
Editorials	282-284
Physical and Chemical Properties of Extracted Honey of Average Composition	285
Asked and Answered	286
Talks to Beginners—M. J. Deyell	287
A Day with the U. S. Bee Culture Field Laboratory at Madison, Wisconsin—E. R. Root	288-289
Just News	290-291
Sulfathiazole Treatment of Foulbrood Colonies—R. H. Kelty	291
Who's Who in Apiculture	292-293
American Honey Institute News Notes—Mrs. Harriett M. Grace	293
Homemaking Chatterbox—Mrs. Harriett M. Grace	294

Subscription Rates—United States, Canada, Pan-American countries, and Spain, one year, $1.50; two years for $2.25; three years for $3.00. Single copy, 15 cents. Other countries, 25c per year additional for postage. Discontinuance.—Subscription stopped on expiration. No subscriber will be run into debt by us for this journal. Change of address.—Give your old address as well as the new and write the name to which the journal has heretofore been addressed. Remittance should be sent by postoffice money order, bank draft, express money order or check. Contributions to Gleanings columns solicited; stamps should be enclosed to insure return to author of manuscript if not printed. Advertising Rates: Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. Advertisers' Reliability: While the publishers do not guarantee advertisements in this journal, they use utmost diligence to establish in advance the reliability of every advertiser using space in this journal.

E. R. Root and M. J. Deyell, Editors; M. W. Hobart, Assistant Editor; H. H. Root, Associate Editor; D. C. Babcock, Circulation Manager.

The A. I. Root Company, Publishers, Medina, Ohio